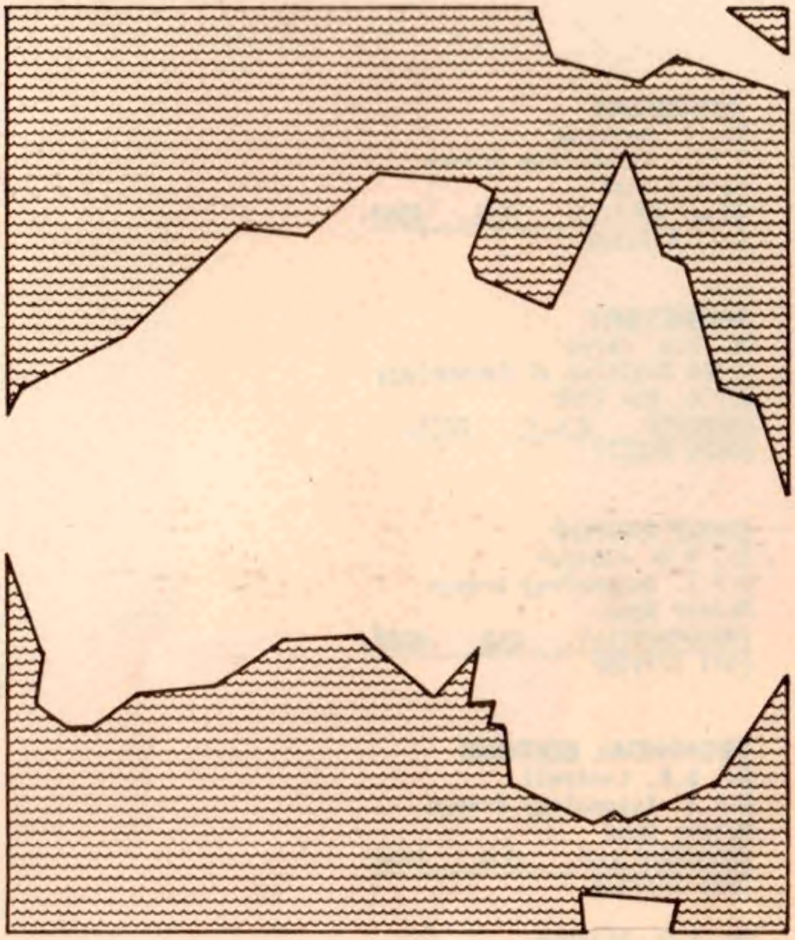
Australian Entomological Society



NEWS BULLETIN

VOLUME 23, PART 2, MAY 1987
Registered by Australia Post
PUBLICATION NO. QBG3480
Price $2·00

AUSTRALIAN ENTOMOLOGICAL SOCIETY

OFFICE BEARERS

PRESIDENT
Mr. T. Passlow
D.P.I. Entomology Branch
Meiers Road
INDOOROOPILLY. QLD. 4068.
(07) 3779350

SECRETARY
Dr. P.B. Carne
CSIRO Division of Entomology
G.P.O. Box 1700
CANBERRA. A.C.T. 2601.
(062) 465077

CHIEF EDITOR
Dr. N.W. Heather
D.P.I. Entomology Branch
Meiers Road
INDOOROOPILLY. QLD. 4068.
(07) 3779382

TECHNICAL EDITORS
Dr. B.K. Cantrell
D.P.I. Entomology Branch
Meiers Road
INDOOROOPILLY. QLD. 4068.
(07) 3779418

Dr. P.G. Allsopp
Department of Primary Industries
EMERALD. QLD. 4720.
(079) 821988

Dr. M.P. Zalucki
Entomology Department
University of Queensland
ST. LUCIA. QLD. 4067.
(07) 3773640

ASSISTANT SECRETARY
Dr. I.D. Naumann
CSIRO Division of Entomology
GPO Box 1700
CANBERRA. ACT. 2601.

ASSISTANT TREASURER
Mr. R.S. McInnes
CSIRO Division of Entomology
GPO Box 1700
CANBERRA. ACT. 2601.

VICE PRESIDENT
Dr. G.H.L. Rothschild
CSIRO Division of Entomology
G.P.O. Box 1700
CANBERRA. A.C.T. 2601.
(062) 465861

IMMEDIATE PAST PRESIDENT
Dr. E.M. Exley
Department of Entomology
University of Queensland
ST. LUCIA. QLD. 4067.
(07) 3773647

TREASURER
Mr. T.A. Weir
CSIRO Division of Entomology
G.P.O. Box 1700
CANBERRA. A.C.T. 2601.
(062) 465293

BUSINESS MANAGER
Mr. J.F. Donaldson
D.P.I. Entomology Branch
Meiers Road
INDOOROOPILLY. QLD. 4068.
(07) 3779419

PUBLIC OFFICER
Dr. P.B. Carne
CSIRO Division of Entomology
G.P.O. Box 1700
CANBERRA. A.C.T. 2601.
(062) 465077

NEWS BULLETIN EDITOR
Dr. G.B. Monteith
Queensland Museum .
P.O. Box 300
SOUTH BRISBANE. QLD. 4101.
(07) 2407699

ASSISTANT NEWS BULLETIN EDITOR
Mr. G.I. Thompson
Queensland Museum
P.O. Box 300
SOUTH BRISBANE. QLD. 4101.
(07) 2407690

(Office bearers continued on rear cover)

Printed by VIBRO PRESS
39 Warren St., Fortitude Valley. Qld. 4006.

AUSTRALIAN ENTOMOLOGICAL SOCIETY NEWS BULLETIN

TABLE OF CONTENTS

Executive Quarterly Report..................22
Notice of 18th Annual General Meeting.......25
Call for Nomination of Office Bearers.......25
Biological Illustration Competition.........25
Correction..................................25

Regional News

Australian Capital Territory..............26
New South Wales...........................27
South Australia...........................30
Victoria..................................32
Queensland................................33
Tasmania..................................36
Northern Territory........................37

Overseas News

Papua New Guinea..........................38
New Zealand...............................38

News from Affiliated Societies

Entomological Society of Victoria.........39
Entomological Society of NSW..............39
Entomological Society of Queensland.......39
Gressitt Centre Dedicated...................40
Obituary - Raymond Straatman................41
Australian Institute of Biology.............43
An Introduced Orchid Cockroach 44
1987 Postgraduate Projects..................46
Notice to Hydradephaga Workers..............55
Entomological Society of China..............56
Symposium on Ephemeroptera & Plecoptera.....58
Association of Pacific Systematists.........58
Appointment of Proxy Form...................59
Nomination of Office Bearer Form............60

ADVERTISING RATES IN THE BULLETIN

The Executive has approved new rates for advertising in the News Bulletin as follows:

	Single Issue	Four Issues (One Year)
Full Page	$60	$180
Half Page	$35	$105
Quarter Page	$24	$72

These rates apply for camera-ready copy supplied by the advertiser. Where this is not supplied a small extra charge may be made for preparation of the layout.

In addition loose inserts supplied by the Advertiser will be included for $50 per issue. These should be of a size which will not project beyond the pages of the Bulletin.

EDITORIAL

In the last issue I presented some arguments for introducing a new, brief title to replace the long-winded name, Australian Entomological Society News Bulletin, which this periodical presently enjoys. My suggestion was Myrmecia, the genus of the Society's ant symbol, and I invited comments or alternatives. As usual the silent majority remained silent; from our 700 members there were 6 replies and 4 of these were from the 18 Councillors to whom I gave an extra prod in my quarterly circular. The responses are summarised as follows:

The first thought the idea of a name change was boring, but suggested "Genitalia". The second thought that "Arthropod News" was appropriate. The third was happy with the present name because "at least it says what it is". The fourth thought that "Myrmecia" sounded too myrmecological and suggested "Postpetiole" (Australia Post - get it!). The fifth suggested "Imago", "Stridulator", "Clavus", "Cercus", "Hexapod", "Tympanum", "Funicle" and "Tergum", but said that some members canvassed "felt strongly that there should be no change". The sixth circulated his tea room and came up with "Mandible", "Ocelli", "Cuticle", "Aedeagus", "Stridulate", "Terminalia", "Regurgitate", "Pheromone", "Frass", "Vitellogeny", "Anastomosis", "Trophallaxis", "Furca", "Entomophila", "Plague", "Buzz", "Bite", "Zoophilia", "Paraphilia" and (wait for it!) "Seminal Vehicle".

Well, where does that leave us? Perhaps I'll just leave the matter in abeyance until the Perth AGM in August and invite further suggestions or comments in the meantime.

Geoff Monteith
News Bulletin Editor

DEADLINE FOR NEXT ISSUE

Material for publication in the August issue of the News Bulletin should be in the hands of the Editor, at his address inside the front cover, by Friday July 24.

Advance notice is given that the August News Bulletin will probably be held over until mid-September so that reports from the Perth Annual General Meeting can be included in it.

EXECUTIVE QUARTERLY REPORT

Meetings

The Executive met on 19 February, 9 March and 21 April.

Membership

During the quarter there were 14 applications for membership, and 14 new members elected. Resignations were accepted from 8 members and 2 deaths were recorded. Total membership rose from 703 to 707, the distribution by States now being:

QLD	170	VIC	88	TAS	26
NSW	147	SA	74	NT	13
ACT	115	WA	34	O/SEAS	40
				TOTAL	707

NEW MEMBERS

We welcome the following new members:

Elected 19 February 1987

Mrs M.A. Hughes, CSIRO Division of Entomology, GPO Box 1700, Canberra ACT, 2601 (to joint membership with Dr R.D. Hughes). Anne is a Technical Officer interested in natural history, lucerne aphids and resistant lucerne.

Mr G.B. Simpson, PO Box 81, Emerald, QLD 4720. Gordon is an Experimentalist in the Department of Primary Industries. He worked at Mareeba on mango seed weevil and is now researching the biology and ecology of black field earwig and other soil insects.

Elected 9 March 1987

Mr E. Bruzzese, B.Agr.Sc., Keith Turnbull Research Institute, PO Box 48, Frankston, VIC 3179. El is a Senior Research Officer working on the biological control of weeds.

Mr R.B. Toffolon, B.Appl. Sci., BCRI, PMB 10, Rydalmere, NSW 2116. Roger is an Entomologist in Urban Entomology and has worked for 10 years on stored products, mushroom and vegetable entomology.

Elected 21 April 1987

Miss M.P. Ablin, B.Sc., Tropical Weeds Research Centre, PO Box 187, Charters Towers, QLD 4820. Marie is concerned in the biological control of weeds and previously worked at the Alan Fletcher Research Station in Brisbane.

Dr W. Backhuys, President, E.J. Brill, Plantijnstraat 2, Leiden, Netherlands. Dr Backhuys is the President of the well-known publisher, E.J. Brill.

Mr P.J. De Barro, B.Agr.Sc.(Hons), Bureau of Sugar Expriment Stations, PO Box 651, Bundaberg, QLD 4670. Paul is a Research Assistant working on the biological control and IPM of insect pests. He earlier worked on millipedes in South Australia.

Dr P.A. Holdsworth, B.Sc.(Hons), Ph.D., c/- Coopers Animal Health Aust. Ltd, Birling Res. Stn., The Northern Road, Private Bag, PO Bringelly, NSW 2171. Dr Holdsworth is a veterinary parasitologist concerned with the parasitology, zoonoses, chemical control and taxonomy of ectoparasites.

Dr J. Muona, Ph.D., Oulanka Biological Station, University of Oulu, Linnanmaa, 90570 Oulu, Finland. Jyrki is a Research Assistant with interests in Staphylinidae and Eucnemidae and in forest ecosystems.

Dr M.A. Keller, Ph.D., Department of Entomology, Waite Agricultural Research Institute, Private Bag, Glen Osmond, SA 5064. Michael is a Lecturer in entomology with interests in behaviour of parasitic Hymenoptera, biological control and population dynamics.

Mr N. Nikolakopoulos, B.Sc.(Hons), Department of Zoology, University of Melbourne, Parkville, VIC 3052. Nick is a postgraduate research student working on systematics, speciation, acoustic behaviour and evolutionary theory. (Student Member).

Dr K.D.Z. Samuels, B.Sc.(Hons), Ph.D., FRES, Department of Entomology, Waite Agricultural Research Institute, Private Bag, Glen Osmond, SA 5064. Kevin is a Research Assistant with interests in fungal pathogens of insects, fungal genetics and Lepidoptera.

Dr H. Spencer, M.Sc., Ph.D., Department of Biology, University of Wollongong, NSW 2500. Hugh is a Lecturer in biology and is studying sensory reception in the cockroach.

Dr G.C. Webb, B.Sc., B.Ed., Ph.D., Genetics Department, University of Melbourne, Parkville, VIC 3052. Graham is an Associate of Melbourne University and a Research Associate of the Murdoch Institute. His interests lie in the evolutionary cytology of Orthoptera and Dermaptera and he has published 16 papers in these fields.

RESIGNATIONS

Resignations were accepted from the following members:

Mr J. Beesley (VIC)
Mr B.M. Braithwaite (NSW)
Mrs J.R. James (ACT)
Dr G.W. Lowe (WA)
Dr M.W. Mansell (O/Seas)
Dr E.A. McMahan (O/Seas)
Dr Liu Shusheng (O/Seas)
Mr R.B. Townsend (NSW)

Deaths

The Executive recorded with deep regret the deaths of Mr G.W. Douglas (VIC) and Mr R. Straatman (QLD).

Addresses Unknown

The Secretary would be pleased to hear from any member knowing the present addresses of the following members:

Mr S.A. Brousek (formerly of NSW)
Dr R.J. Hart (formerly of NSW)
Mr M.R. Newton (formerly of SA)

ADDRESS CHANGES

Changes of Address or Title

Dr P.G. Allsopp, B.S.E.S., PO Box 61, Bundaberg, QLD 4670 (QLD).
Dr D.J. Bickel, Australian Museum, PO Box A285, Sydney South, NSW 2000 (NSW).
Mr R.H. Broadley, DPI Horticulture Branch, PO Box 5083, Sunshine Coast Mail Centre, Nambour, QLD 4560 (QLD).
Dr S.C. Cairns, Department of Zoology, University of New England, Armidale, NSW 2351 (NSW).
Mr A.C. Champion, Department of Parasitology, University of Queensland, St Lucia, QLD 4067 (NSW).
Miss N. Chiengwattana, Phitsanulok Rice Research Centre, Wang Thong, Phitsanulok Thailand 65130 (WA).
Mr G.P. Davis, Department of Agriculture, Veterinary Research Laboratory, "Attwood", Mickleham Road, Westmeadows, VIC 3047 (NT).
Mr J.C. Dean, Water Sciences Laboratory, MMBW, 68 Ricketts Road, Mount Waverley, VIC 3149 (VIC).
Dr M.L. Debenham (previously Ms).
Dr V.E. Edge, B.C.R.I., PMB 10, Rydalmere, NSW 2116 (NSW).
Mr K. Farrow, 33 Koolewong Street, Stafford Heights, QLD 4053 (QLD).
Dr B.S. Fletcher, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601 (NSW).
Ms A.C. Frodsham, 2 Hunt Grove Road, Ithaca, NY 14850, USA (ACT).
Mr J.D. Gillett, Department of Primary Production, PO Box 4160, Darwin, NT 5794 (O/Seas).
Mr C. Hawkins, Ministry of Forests and Lands, Research Branch, RR7 RMO6 Prince George, B.C. Canada V2N 2JS (O/Seas).
Ms K.L. Hergstrom, RMB 2265, Tatura, VIC 3616 (VIC).

Mrs A.R. Hill, WA Department of Agriculture (Entomology), Baron Hay Court, South Perth, WA 6151 (WA).
Dr C.J. Hill, Department of Zoology, James Cook University, Townsville, QLD 4811 (QLD).
Dr D.G. James, Yanco Agricultural Institute, NSWDA, Yanco, NSW 2703 (NSW).
Dr W.K. Jorgensen, 33 Truscott Street, Moorooka, QLD 4105 (QLD).
Dr M. Keerati-Kasikorn, add postcode 40002 after Thailand.
Fr. B.B. Lowery, St Aloysius College, 47 Upper Pitt Street, Milsons Point NSW 2061 (SA).
Mr R.G. Lukins, 63 Curban Street, Balgowlah, NSW 2093 (NSW).
Dr J.D. Majer, School of Biology, Curtin University of Technology, Kent Street, South Bentley, WA 6102 (WA).
Mr S.F. McEvey, Lab. Biol. Genetiques Evolutives C.N.R.S., 91190 Gif-sur-Yvette, France (O/Seas).

Dr W. Milne, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601 (NSW).
Mr F.D. Page, DPI, PO Box 10, Applethorpe, QLD 4378 (QLD).
Mr R.G. Piper, Joint Tropical Trials and Research Establishment (JTTRE), PO Box 838, Innisfail, QLD 4860 (QLD).
Mr A.C. Postle, WA Department of Agriculture (Entomology), Baron Hay Court, South Perth, WA 6151 (WA).
Ms D. Rae, c/- Sugar Research Institute, PO Box 5611, Mackay Mail Centre, QLD 4741 (QLD).
Mr A.C. Rath, Newtown Research Labs, Department of Agriculture, St John's Ave, Newtown, TAS 7008 (TAS).
Dr J. Rheinheimer, Posener Strasse 10, D23 Altenholz, West Germany (ACT).
Dr R.C. Russell (previously Mr).
Mr G.P. Shelden, Plant Standards, D.A.R.A., PO Box 500, East Melbourne, VIC 3022 (VIC).
Dr E.R. Sinclair, MS 1096, Burnside Road, Nambour, QLD 4560 (QLD).
Miss M.A. Terras, B.C.R.I., PMB No. 10, Rydalmere, NSW 2116 (NSW).
Mr J. Van Schagen, School of Biology, Curtin University of Technology, GPO Box U1987, Perth, WA 6001 (WA).
Mr M. Wegecsanyi, 19 Hazeldine Road, Glen Iris, VIC 3146 (VIC).
Dr P.W. Wellings, CSIRO Entomology, GPO Box 1700, Canberra, ACT 2601 (NSW).
Dr C.H. Wild, Lot 13, Repeater Station Road, Springbrook, QLD 4213 (QLD).
Mr A.E. Wright, 116 Empire Avenue, Wembley Downs, WA 6019 (WA).
Ms C.M. Yule, B16, D.B.C.L., Panguna, Bougainville Island, Papua New Guinea (VIC).

EXECUTIVE NEWS ITEMS

Selling price of Arachnology Symposium

The Proceedings of this Symposium will be $20 post paid for members in Australia and $30 for libraries and overseas buyers.

Arrangements for the 18 AGM, Perth, 15-20 August

The Executive has received regularly copies of the Minutes of the Organising Committee. It is evident that all aspects of the meeting have been very carefully organised and that both scientifically and socially it should be a most enjoyable occasion.

Student Awards for Excellence in Research

It seem likely that only two entries will be made.

Biological Illustration Competition

A total of 42 entries from 31 entrants has been received and judging will take place on 24 April. Students of the Newcastle College of Advanced Education comprise about 90% of the entrants.

Increases of Charges for Publications

The Executive has decided on the following increases to take effect as from 1st January 1988. Journal page charge will rise from $26.00 to $30.00 per page, and reprint charges from $3.00 to $5.00 per page for each 50 copies. Journal subscriptions for non-members will increase from $50.00 to $70.00 within Australia and from $53.00 to $80.00 for overseas subscribers. The increases have been made necessary by continuing increases in the costs of printing and mailing. Miscellaneous Publication No. 3 will increase from $2.50 to $3.50 post paid.

Subscription Rates

Many members have been overlooking the fact that the reduction of subscription rate from $30.00 to $25.00 applies only if the subscription is paid by 1st March; payments at the lower rate have been received well into the latter part of the year. The Treasurer will be sending supplementary accounts to those members who overlook this condition.

National Forum on Publishing in the Natural and Social Sciences

Dr Naumann (Assistant Secretary) will represent the Society at this Forum organised by ANZAAS in late May.

Journal Printing

The Chief Editor, Dr Heather, has advised that our printers, Watson Ferguson & Co., recently installed new typesetting machinery and that we can look forward to an overall improvement in print quality in the future.

NOTICE OF 18TH ANNUAL GENERAL MEETING

The Society's 18th Annual General Meeting will be held at the University of Western Australia, Perth, at 8.00 pm on Sunday 16 August 1987.

AGENDA

1. Opening
2. General Announcements
3. Announcement of Proxies
4. Deaths of members recorded since the 17th AGM
5. Minutes of 17th AGM (published in News Bulletin for August 1986)
6. Executive Annual Report, including reports of Chief Editor, Treasurer, Business Manager and News Bulletin Editor.
7. Committee Reports
    (a) Conservation Committee
    (b) Entomological Slide Committee
8. Competitions
    (a) Student Award for Excellence in Research
    (b) Biological Illustration Competition
9. Business arising from 33rd Council Meeting
10. Subscriptions for 1988
11. Appointment of an Auditor
12. Announcement of Office-bearers and Councillors for 1987/88
13. Interim Report of 18 AGM Organising Committee
14. Progress Report by 19 AGM Organising Committee
15. Other business (as arranged with Secretary not later than 7 July)
    (a) Title of News Bulletin (see Editorial in February 1987 issue)
16. Location of Society headquarters following 19th AGM
17. Closure.

CALL FOR NOMINATION OF OFFICE BEARERS AND COUNCILLORS

The following offices will fall vacant at the Society's 18th AGM on 16 August, 1987. Nominations for election should be made on the form provided at the back of this News Bulletin and should reach the Secretary not later than 7 July 1987.

Vacant Office	Present Incumbent
President	*Mr T. Passlow
Regional Councillors	
QLD	*Miss M.A. Schneider
QLD	*Dr E. Hassan
QLD	*Mr M.F. Downes
NSW	*Dr P.C. Gregg
NSW	*Dr D.F. Hales
NSW	*Mr J.A. Macdonald
ACT	*Dr J.C. Daly
ACT	*Mr C.A.M. Reid
VIC	*Dr P.P. Stahle
VIC	*Dr D.M. Ewart
TAS	*Mr A.C. Rath
SA	**Dr D.J. Cooper
SA	***Vacant
WA	*Dr W.J. Bailey
NT	**Mr T.L. Fenner

* Eligible for re-election for 1 further annual term.

** Not eligible for re-election as a Regional Councillor, having served for 3 consecutive annual terms.

*** New position as SA is now entitled to a second Regional Councillor.

BIOLOGICAL ILLUSTRATION COMPETITION

The judging panel has selected the following as winners of the 1987 competition.

1st prize ($300): Mr Andrew Carter of Canberra

2nd prize ($100): Miss T. Wawrzonek of Newcastle

3rd prize ($50): Miss J. Trotter of Gladesville, NSW

None are members of the Society.

Some notes about the winners, and reproductions of their award-winning entries, will appear in the August News Bulletin.

CORRECTION

In the membership list which was published in the last issue of the News Bulletin Mr G.L. Baker and Mr H.G. Greening should have been indicated as being Foundation Members of the Society. Further, Foundation Membership was ascribed in the list to Dr J.A. Harris of Canberra, but not to Mr J.A. Harris of Healesville - this should be reversed.

REGIONAL NEWS

AUSTRALIAN CAPITAL TERITORY

CSIRO Australian National Insect Collection

The informal taxonomy seminars were presented by the following: Malcolm Scoble (BMNH) (the relationship of Hedylidae to butterflies); Robert Jeanne (Wisconsin) (division of labour in neotropical vespids); Frances Michaelis (ANPWS) (insect conservation in Australia); Norman Johnson (Ohio) (hymenoptera phylogeny); Jyrki Muona (Finland) (Australian eucnemids); Penny Greenslade (ANIC) (terrestrial arthropods on Macquarie Island).

Work has started on the new extension to the ANIC building. This column will keep you informed of its progress.

The migration of entomologists has slackened off in the last few months, and most residents seem to be writing chapters of some book or other. Lepidoptera section was frequented by Ian Common (Toowoomba), continuing work on his new book, 'Moths of Australia', and Peter McQuillan (Hobart), looking at tortricids and geometrids. Marianne Horak left in March for a three month postdoc tour of Europe (Leyden and London) to study the Australian Tortricidae: Olethreutinae at generic level (there are 80).

The collection of Dermaptera was studied by Seiroku Sakai (Daito Bunko Uni., Japan). Dave Rentz is working up Taiwanese Orthos. Murray Fletcher (Rydalmere) came to study the Flatidae. The mantispids were visited by Kevin Lambkin (Brisbane).

The Hymenoptera section had several nearctic visitors: Robert Jeanne, working on vespid behaviour; Howard and Mary Evans (Colorado), studying sphecids; and Norman Johnson who attacked the telenomine sceleonids. Johan Billen (Belgium) visited as part of his study of pheromone glands in Hymenoptera. John Macdonald (Rydalmere) studied pergid larvae. There have also been visits by Terry Nolan (Bega), a freelance artist working on 'The Insects of Australia'.

In Coleoptera, John Lawrence has been appointed Research Associate of the Bishop Museum (Hawaii) and Elwood Zimmerman was elected Life Member of the Hawaiian Ent. Soc. John has been co-ordinating research on the Australian Tenebrionidae with John Doyen (Berkeley) and Eric Matthews (Adelaide), the first fruit of which is almost completed, an annotated generic check-list. He is an invited speaker at the forthcoming RESL symposium, Insect-Fungus Interactions.

Australian National University

Shelley Rosario (CSIRO Entomology) has started an M.Sc. in the Zoology Department on life history of Eurymeloides punctata.

CSIRO Division of Entomology

The Division now has an Information Officer. Russell Moran, who has worked for Barry Longstaff for a number of years, is now responsible for public enquiries, requests for data on the Division, gossip and a myriad of other tasks. The new position in the information area is necessary to assist the scientific liaison officer, Anne Frodsham, because of the increasing need to communicate the results of CSIRO's work to the broader community.

This past three months has seen a large number of staff changes in the Division. George Rothschild has been seconded to the Bureau of Rural Science as its foundation director, from 18 May. The Bureau, an autonomous body within the Department of Primary Industry, has the role of stimulating the practical application of modern science and advanced technology in Australian rural science. George will also be scientific ministerial adviser to the Minister, John Kerin. Congratulations George. Dr David Evans, Stored Grains Research Laboratory, will be the new Assistant Chief of Division.

We have recently welcomed the Warrawee crowd, Brian Fletcher, Paul Wellings, Wendy Milne and Peter Hart, who have moved here after the closure and sale of the Sydney laboratory. The official shut down date was 30 January 1987. The Division's Biological Control Unit in Acapulco, Mexico was closed in December 1986 and has been re-established at Veracruz. Geoff Clarke and Lee Regan have replaced Richard Dallwitz and David Holt in the Division's Screw-worm facility at Port Moresby.

John Oakeshott has joined the molecular biology group from ANU with his five Ph.D. students. John has an interest in the molecular basis of insecticide resistance. Wayne Knibb has joined the group for twelve months from University of New England. Abigail Elizur is a new research scientist and will be studying the molecular biology of Drosophila and Lucilia.

Dr Jim Raulston joined the Division for six weeks, although he spent much of his time at Narrabri Cotton Research Unit. Jim works on Heliothis ecology and behaviour, particularly in relation to migration, with the USDA at Brownsville, Texas. Most of Jim's observations in Australia focused on the nocturnal behaviour of Heliothis. Roger Farrow will join Jim in the USA in June to do some complementary work with American species of Heliothis.

Keith Binnington is joined by Dr Brouria Feldman-Muhsam, Professor of Parasitology, Hebrew University, Jerusalem for several months. Mr Liang Yong Sheng, Deputy Director, Mianyang Grain Research Institute and Mr Ren, Assistant Engineer, Grain Storage and Transportation Bureau, will be visiting SGRL for two months from 30 March.

Joanne Daly and Chris Reid
Regional Councillors

NEW SOUTH WALES

SYDNEY METROPOLITAN NEWS

Forestry Commission of NSW

The Lyctid borer research programme is being maintained by Jennifer Whitney with preliminary work directed towards establishing cultures of the species and strains of Lyctid which are representative of NSW. Trap boards of starch-rich flame tree are exposed regularly throughout the State for this purpose. Already, taxonomic problems and possible misconceptions are apparent with respect to the dominant lyctid species which cause problems for timber in service. Research is planned for the starch thresholds and optimisation of artificial diets for mass rearing.

Christine Stone and Jack Simpson recently visited several Pinus elliotti planations near Casino to inspect increased tree mortality thought to be attributable to Ips grandicollis. It now appears likely that there were several factors, apart from the Ips attack, contributing to the tree mortality.

Department of Agriculture, Rydalmere

There have been some new faces at the BCRI during the last few months. Maryanne Terras (working with Alan Clift on mushroom flies), Mike Heesom (working on insecticide resistance status of Muscina stabulans and Musca domestica from poultry farms) and Jeanette Rophail (working on resistance testing with particular reference to mites) were all appointed as Technical Officers (Scientific) late last year.

There is good news for those who are interested in Phytoseiid mites. A book by Eberhard Schicha has recently been published on the taxonomy of the Australian Phytoseiidae. This publication should fill a previous gap in our knowledge of the Australian mite fauna.

NEW PUBLICATION

Acarology, Entomology, Zoology, Mites

PHYTOSEIIDAE OF AUSTRALIA AND NEIGHBORING AREAS

By: E. Schicha

Published: 1986 (December), 200 pp (expected)
Over 110 drawings and photographs
Price: $60.00 + $2.00 postage/handling
Publisher: Indira Publishing House

The value of phytoseiids (Acarina) as predators of plant feeding mites is well documented. Many species have been used successfully in biological and integrated control programs of the mite pests. Of about 1000 species known from all over the world, 126 species including many new are dealt with in the present work. Each species is illustrated and includes data on the distribution, hosts, identification, morphology, significance as predators and systematics. A detailed key is also provided for identification of different genera, species groups and species.

More recently Robyn Pratt (working with Howard Greening on resistance testing of stored grain pests) and John Macdonald (working with Murray Fletcher in Taxonomy) have been appointed as part-time temporary Technical Officers (Scientific). In addition, Roger Toffolon was appointed as Entomologist (Urban Entomology) earlier in the year and Gary Levot was appointed as Entomologist (working on pests associated with livestock).

Graham Goodyer attended the Grain Legumes 1987 Research and Production Seminar held at Dubbo on the 11-12 March. He presented a paper on pests of winter legumes in NSW. Murray Fletcher and John Macdonald visited the ANIC on the 17-19 March to work on the leafhoppers in the collection. Graham Brown spent some time at the Department of Ag., Wollongbar working with their collection.

Macleay Museum

Earlier in the year the Macleay Museum received a donation of 1000 Czechoslovakian beetles plus an additional 3000 Australian Microcoleoptera from Richard Bejsak. In addition, more foreign scarabaeid types recently have been identified in the collection.

During the next month Woody plans to attend an Antarctic symposium on Macquarie Island to be held in Hobart. He intends to present a paper on mites. He will then attend the New Zealand Ent. Soc. Conference in Christchurch where he will present a paper on tardigrades.

Australian Museum

Over the past months the collection has attracted many visitors including John Ismay (Oxford University), Hubert Blatterer (University of Salzburg), Dr Jim Carpenter (Harvard University), Dr Frank Hildebrand (West Germany), Drs Al Newton Jr. and Margaret Thayer (Field Museum of Natural History, Chicago), Bryan Cantrell (DPI, Queensland), Paul Kelly (Museum of Victoria), Dr Chris Thompson (USDA, Washington), Jo Cardale (CSIRO Canberra), Dr Frank Nicholas (Sydney University), and Henry and Anne Howden (Carleton University, Ottawa). Recently Professor Sakai (Tokyo) viewed the Dermaptera in the collection.

Recently Tamar Robinson has commenced work as an assistant with the entomology department. She will be working with them for three months.

David McAlpine, Roger de Keyzer and Barry Day have been collecting on the north coast of NSW. David and Roger have commenced a taxonomic review of the Teratomyzidae (Fern-flies) and so far 40 Australian species have been sorted. Prior to this work only 3 world species were known of and none were Australian. They would welcome any material preferably, but not essentially, in alcohol.

Army Malaria Research Unit

Late last year Tony Sweeney, Bob Cooper and Steve Frances collaborated with an American contingent to conduct field trials at Innisfail for repellant formulations. The American team included Lou Routledge (Letterman Army Institute of Research, San Francisco) and Raj Gupta with technical support from John Inasie and the co-operation of Dale Westjohn as medical officer.

Bob Cooper has just returned from the USA after spending five weeks visiting the Walter Reid Institute of Research (Washington) where he learnt techniques for infecting mosquitoes with *Plasmodium falciparum*. He also managed a short visit with Lou Routledge and Raj Gupta in San Francisco.

In the coming months Tony, Bob and Steve will be involved in a survey for *Anopheles farauti* in the Normanton area.

CSIRO

Following the closure of CSIRO Warrawee at the end of January, Alan Dyce has continued working from a laboratory located at his home. Alan plans to continue his work on ceratopogonids and phlebotomines and looks forward to having visitors in the future.

Only recently Rudi Meisswinkel (South Africa) visited with Alan to discuss the *Culicoides* fauna of both continents. Alan also reports that Dr David Lewis, worker on phlebotomines and a member of staff at the British Msueum prior to his retirement, died late last year.

Macquarie University

School of Biological Sciences

Martin Horwood is now enrolled as a part-time M.Sc. student. He will be comparing the effects of nemestrinid parasitization and juvenile hormone deficiency in locusts, and is taking some advanced courses in statistics.

About 70 students have enrolled for the new course "Biology of Insects", to be run in second semester this year and in alternate years. The course will be concerned mainly with physiology and development.

After working last year as technical officer running aphid gels and preparing aphid chromosomes, you'd think Ross Lardner would be looking for a change. However, he's chosen to do his honours research on an undescribed cecidomyiid endoparasite of the aphid, Schoutedenia lutea. Cecidomyiid endoparasites of aphids are a little-known group, and we look forward to hearing more about this one as a result of Ross's studies. Rhonda Chapman is the new gel runner and chromosome preparer.

Dinah Hales gave seminars on aphid sex determination at the lunchtime series in the Schools of Biological Sciences at Macquarie and Sydney Universities during March. Other Macquarie lunchtime seminars have included Mike Gray, on funnel web spiders, and Christian Peeters, on the absence of queens in some primitive ants, so it's been an unusually entomological series in a School whose interests run through the whole range of the biological sciences.

Tom Friedel, of Ciba-Geigy Australia, and Dinah Hales have been studying the effects of cyromazine on Lucilia larvae, and visited Keith Binnington at CSIRO Division of Entomology to discuss the work. Dinah also consulted with Paul Wellings and Mary Carver on aphid projects, while Tom renewed acquaintance with Professor Cedric Gillott.

Profound apologies to anyone who tried to phone Macquarie during February or March. The changeover to the new telephone system was fraught with unexpected problems and we have been essentially incommunicado. If you were fuming because you kept getting the engaged signal, or the wrong number .... we weren't enjoying it either! but things are getting back to normal now.

Drosophila geneticist Dick Frankham has been persuaded to summarise his current research for the News Bulletin. It falls into three main areas. The first of these is quantitative genetics, when Dick and assistants Mark Graham and Naomi Lowe use a sophisticated instrument called an inebriometer to measure inebriation time as a model quantitative character. This program is directed towards evaluating theory on contribution of mutations to selection response, and artificial selection and reproductive fitness in animal breeding. Secondly, Dick, in collaboration with colleagues Hatch Stokes, Jim Speirs and Millar Whalley, and former students Phil England and Michael Cillings, is investigating the evolution of the rRNA multigene family. The third area is position effect variegation; Dick and Hatch are studying the molecular basis of the mottled or variegated expression of genes near breakpoints of chromosomal rearrangements, with the objective of deliberately producing variegated gene expression in ornamental plants and in animals by genetic engineering techniques.

School of Public Health and Tropical Medicine

The SPHTM was closed on 31st March, 1987, and of the entomology staff, Michael O'Donnell and Mabel Griffiths have been retrenched. Joan Bryan and Richard Russell have been given an extension of employment to 30 June, while negotiations continue concerning their future employment. Margaret Debenham and Megan Hicks continue on grants.

NSW Institute of Technology

The School of Biological and Biomedical Sciences has expanded its activities and moved part of the academic staff from Gore Hill to the city. All the insect rearing, testing and biohazard facilities are now on Level 14 of the Institute's tower building in Broadway. The "little insectary in the sky" breeds several species of domestic cockroaches, as well as fleas and silverfish. We hope Peter Miller and his colleagues remain popular with the rest of the Institute!

Back at Gore Hill, things are buzzing too. Ken Brown has recieved an internal grant for blowfly facilities, and will soon be doing competition experiments between Calliphora species.

CERIT
(Centre for Entomological Research and Insecticide Technology)

Tony Wellham, who has been Technical Officer here, working with Chris Virgona (CSIRO Organic Chemistry), for nearly 10 years, has resigned to take up a position at the Department of Agriculture NSW

Horticultural Research Station, Gosford. For many years Tony has travelled up to four hours each day to come to work, from, you guessed it, - Gosford! Now his new work place is conveniently situated just around the corner. We will miss him greatly and we are sure he will put all those extra spare hours to good use. Chris Virgona is still looking for a replacement for Tony.

Danielle Heilpern has begun her practical work at CERIT, for her honours thesis. Her topic is concerned with the development of cross resistance to organophosphates in *Lucilia cuprina*. We wish her luck with her very busy schedule.

Visitors to CERIT include Ian Stiff from Department of Agriculture Wollongbah Research Station, who discussed pheromones and pheromone bioassay techniques with Chris Orton (Ian worked previously with Erik Shipp for many years in the School of Zoology) and Wellard Fernando, Production Manager, Reckitt and Coleman, Sri Lanka, who inspected the CERIT aerosol chambers.

Julia Nolan has just joined our staff. She is employed on Unisearch contract, doing various testing protocols for companies. Julia is a graduate of the UNSW School of Zoology.

University of New South Wales

School of Zoology

Ross Crozier is busy co-authoring a book on sex allocation in social hymenopterans. The group has recently been visited by Bob Jeanne from the University of Wisconsin, and by Johan Billen from Belgium, whose interests are in pheromones of social insects.

Christian Peeters recently spent three weeks in Kakadu National Park collecting ponerine ants and went with Alan Andersen from CSIRO in an unsuccessful search for *Diacamma* in the Daly River region. Christian would be grateful for any specimens of *Diacamma* from the Northern Territory; it has been collected in the past and seems to differ from the Queensland species.

University of Sydney

Department of Plant Pathology and Agricultural Entomology

Doug Rugg, with Harley Rose and family, has made another pilgrimage to collect giant cockroaches in Queensland, this time around Cooktown and Cairns. A Sydney pest controller recently offered a trophy for the owner of the largest cockroach in Australia. Not surprisingly, the winner's surname happened to be Rose. Congratulations Matthew!

Dinah Hales and John Macdonald
Regional Councillors

NSW COUNTRY NEWS

Geoff Williams, at Landsdowne, reports several visitors this year. Henry and Anne Howden called in December and January and were interested in a new rainforest geotrupine and southern records of *Blackburnium angulicorne*. Geoff and Andrew Holloway, and later David McAlpine, Barry Day and Roger De Keyzer, all from the Australian Museum, have stayed and pursued their interests in thysanoptera, Diptera and Cerambycidae.

Peter Gregg
Regional Councillor

SOUTH AUSTRALIA

SA Department of Agriculture

Peter Bailey has been in Portugal since May, 1986, searching for biological control agents for use against the black Portuguese millipede in South Australia. He has located populations of the parasitic fly recommended by Geoff Baker of CSIRO as a possible control agent. Larvae and pupae of the fly were collected last year and adult flies have now emerged from pupae held in the laboratory, making a positive identification possible. The fly is *Pelidnoptera nigripennis* (Fabricus) [Diptera: Sciomyzidae]. Flies have mated and laid eggs on millipedes in the laboratory and Peter will attempt to set up a breeding colony in Portugal. A small trial shipment of pupae was also sent to Australia last December and adults from this shipment are being used for specificity testing against native millipedes.

Aleks Terauds, Tasmanian Department of Agriculture, visited the Entomology Unit in early March. A wide range of topics were discussed with Aleks after which he visited Kadina to implement a Mediterranean fruit fly eradication programme.

Geoff Baker, CSIRO, Division of Entomology, addressed the entomologists on his research on the behaviour and ecology of introduced snails in SA. His studies are aimed to assist with the selection of potential biological agents for the control of these snails, and integrate with the studies by Dennis Hopkins on other control tactics for the control of snails in cereal crops.

The Entomology Unit discussed its main research projects and services with representatives of the agricultural chemical industry, as part of a Departmental Industry Conference held in March.

Tony Smith, a Visiting Scientist with the Entomology Unit, will continue his term with the Unit to March 1988. He will continue to study the ecology and control of pea weevil in field pea crops with Greg Baker, and to develop mathematical models of the system.

University of Adelaide - Department of Zoology

Shelley Barker is travelling in the West and North West of Australia on long service leave. Alice Wells made a fleeting visit to the 5th International Ephemeroptera and Plecoptera Conferences in Marysville in February, Vincent Resh, from Berkeley, California visited the Zoology Department in February for a few days.

South Australian Museum

Bob Domrow, Queensland Museum, spent 3 weeks studying the parasitic sarcoptiform mites described by Womersley. Norman Johnson, Ohio State University, spent a few days examining parasitoid Hymenoptera, and Ken Fairey called to study moths.

David Lee visited Europe on long service leave, and saw a number of mite and soil zoology people around London. He was taken aback by some staff cut-backs, especially where it appeared that the "food mountain" had reduced the value of plant protection by entomological studies, as at Rothamstead. He also visited Spain where Luis Subias of the University of Madrid, an expert on the somewhat taxonomically difficult and diverse oppiid oribate mites, agreed to work on Australian material. David Hirst and David Lee spent two weeks in late March collecting spiders on Eyre Peninsula, much of it being done with head torches on the moonless nights.

Gordon Gross, assisted by an ABRS grant funded support team which included over the period Debbie van Weenen, Kath Ashby and Maria Drakos, has been working over the last year preparing and inputting data for the Heteroptera volumes of the Zoological Catalogue of Australia project. Their parts in the preparation of data for input covered making available, or preparing, much material that is actually being inserted into the computer by Gerry Cassis in Canberra. Most of this was completed by the middle of last year. Their own specific inputting project was to prepare for ABRS in optically readable form a numbered consolidated bibliography for Gerry to use to shorten his inputting load. This part of their project was completed in February when the last batch of the 332 pp produced was posted off, with the last of the 3,500 references, or thereabouts. Still in the future is helping check Gerry's files and the ultimate chore -proof-reading.

Waite Institute - Department of Entomology

Derek Maelzer will be on study leave from early April to late August. He will be visiting colleagues in the United States (Riverside, Davis and Washington State), in the U.K. (Imperial College, Silwood Park and GCRI, Littlehampton), in Holland and in France (Montpellier). On the way back to Australia, Derek will also visit former student Dr K.C. Khoo in Kuala Lumpur.

Dr Dennis Haugen, a Postdoctoral Fellow, joined the Department recently. He will be working on the Ips project for approximately two years. He and David Morgan will soon depart on a 2 week trip to the eastern states to check on the status of released natural enemies of Ips grandicollis.

Mr Peng Zhongkui from Hunnang Province, Central China, joined the Department recently to work under Peter Miles' supervision as a graduate trainee. He is working on the allelochemic responses of rose tissue to attack by rose aphids.

Sarah Elton, a graduate in microbiology, joined the Department to assist Jane Drummond and Kevin Samuels on the Metarhizium/sugar cane projects.

A delegation of visiting scientists from The Peoples Republic of China will be visiting the Department in May.

CSIRO Division of Soils

Bonny Vogelzang has left CSIRO Entomology for a position in the SA Department of Agriculture at Lenswood. Bruce Hawke, a recent honours graduate from Adelaide University has now joined Geoff Baker as a Technical Assistant at Glen Osmond.

Geoff Baker recently attended the SCOPE International Synthesis Symposium on the ecology of invasions in Hawaii, addressed a workshop in San Diego, California on the biology and control of the white snail Theba pisana, recently introduced in California, and visited U.C. San Diego and U.C. Riverside for discussions with staff on a variety of topics including the use of sciomyzids as control agents against snail pests.

Professor Walt Whitford, State University of New Mexico at La Cruces visited Ken Lee for a week during March to discuss arid zone ecology with particular reference to termites.

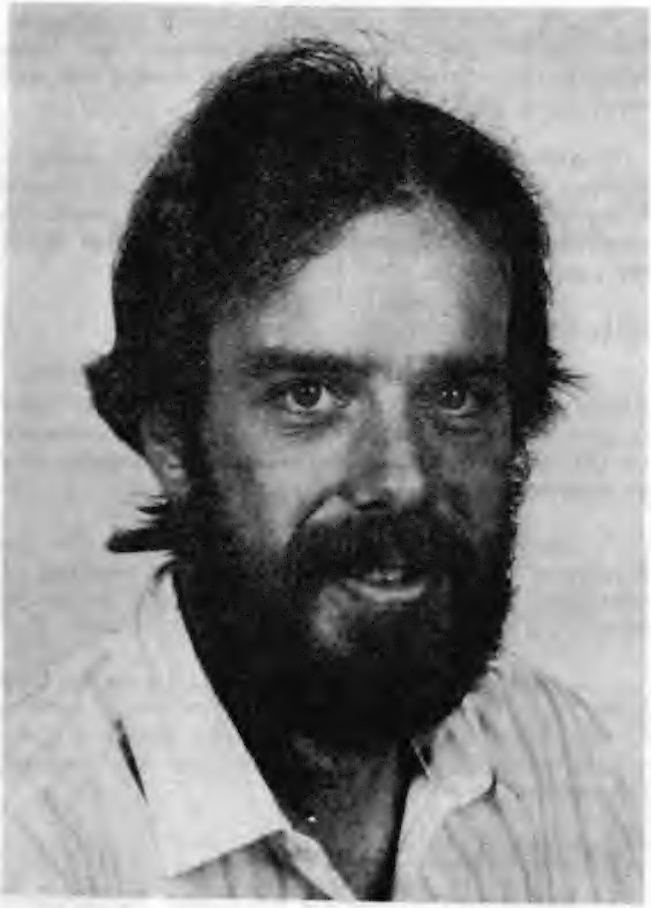
David Cooper
Regional Councillor

VICTORIA

Plant Research Institute, Burnley

Michael Braby recently discovered several breeding populations of the Eltham Copper, Paralucia pyrodiscus lucida, (a butterfly considered to be virtually extinct) in the Eltham district near Melbourne. This subspecies, which has not been seen for some 28 years, is known to exist in only five discrete colonies. However, the largest and most viable of these colonies is threatened by subdivision and housing development. It is feared that as a result of its habitat being destroyed, the butterfly will almost certainly become extinct. A deputation led by David Crosby, Ross Field, Michael Braby and David Cameron, in conjunction with the Member of Greensborough, Mrs Pauline Toner, approached the Victorian Government in an effort to protect the colonies and the habitat of this rare and beautiful species. A very well attended public meeting, addressed by media-personality and environmentalist Rob Gell, was held at the Eltham Community Centre on 10 April, 1987. At the meeting a committee was formed to co-ordinate the impending fight to preserve the species.

CAPTION: Michael Braby (top), an entomologist with PRI Burnley, and who has been involved with investigating the status of the rare Eltham Copper, Paralucia pyrodiscus lucida (above).



CAPTION: Paul Horne, a recent appointee to PRI Burnley.

Paul Horne has recently commenced work at PRI, investigating alternative control measures to organochlorine insecticides. Paul previously worked with the Rural Water Commission developing a laboratory stream facility. Prior to working with the R.W.C. Paul was with the Antarctic Division as a Biologist.

Gordon Berg visited Robin Bedding and John Curran, CSIRO, Hobart in February to discuss collaborative work on the control of redheaded pasture cockchafer with entomopathogenic nematodes.

La Trobe University

The Botany Department recently hosted two Americans who studied fungi in the hindguts of arthropods. Prof. Marvin Williams of Kearney State College, Nebraska and Prof. Robert Lichtwardt of the University of Kansas, Lawrence, have been collaborating in their trichomycete research since 1959. They came to Australia to further the knowledge of the biosystematics and evolution of these fungi. Several new species were collected, and one from chironomid larvae in a stream of Kinglake, will become a new genus.

Museum of Victoria, Environmental Records Section

The highly successful public display of bullants (*Myrmecia nigriscapa*) has been filmed by ABC Earthwatch and will feature on national television later this year.

Peter Stahle and Don Ewart
Regional Councillors

QUEENSLAND

SOUTH EAST QUEENSLAND NEWS

Department of Lands, Alan Fletcher Res. Stn.

Paul McFadyen has spent the last four months working with a team involved with the strategic planning of the Land's Department's activities including the computerisation of the Department's operations. He will return to his entomological duties in May or June.

Queensland Institute of Medical Research

Pipi Mottram, George Hapgood and Paul Barker-Hudson organized the course on "Mosquito Identification and Control" for health surveyors at Rockhampton from 5th to 10th April. The course was so successful that a specimen, an adult chironomid, included to confuse participants was named by Greg Merry (Senior Health Surveyor, Rockhampton City Council) as *Georgis pipibarkis* - a hairy lipped insect without mouthparts!

Brian Kay recently participated in a WHO/FAO/UNEP workshop on mosquito control in riceland agroecosystems at Los Banos, Philippines, March 7-14, and then left for 3 weeks field work in French Polynesia in relation to his collaborative studies on the copepod *Mesocyclops aspericornis* for control of *Aedes* vectors of dengue and filariasis.

University of Queensland

At the end of April, Martin Rice left on a five week overseas trip with a twofold purpose. Firstly he visited Singapore as an advisor on the establishment of a neuro-physiology laboratory for insect sensory work. The second purpose was to visit Thailand, India, Kenya, Zimbabwe and Mauritius to investigate the quality of local cultivars of neem trees, to collect their seeds and discuss neem biology.

There has been a number of visitors to the Department in recent weeks. These included Mali Malipatil (Museum of Northern Territory), Roger de Keyzer (Australian Museum) and Ken Walker (Museum of Victoria). Malipatil visited just before Easter to study and borrow reduviid bugs. Roger visited twice, in March and April, to continue his sorting and rearrangement of the cerambycid beetle collection. He had started this during his student days in the Department. He also sorted out and borrowed some more flies of the family Teratomyzidae for his work with David McAlpine. Ken Walker called in at the end of April to talk bees (and other things) with old colleagues.

Howard and Mary Alice Evans, Colorado State University, spent nearly a week in the Department in March before travelling north to the Atherton Tableland where they are continuing their studies of ground-nesting sphecid wasps of the genus Cerceris.

Elizabeth Exley will be on study leave in the USA from the end of June until December.

Hugh Paterson will visit Czechoslovakia in July to attend a conference entitled "Evolution today: moving towards a new synthesis". He will give two papers entitled "Problems with existing paradigms" and "Reproductive behaviour - the key to species" respectively.

DPI Entomology Branch

David Ironside, experimentalist at Nambour spent 2 weeks during March-April 1987 consulting with Mac Farms in Hawaii. Mac Farms are one of the biggest Macadamia nut growers in Hawaii and have a problem with macadamia nut borer accidentally introduced from Australia some time ago. David is the expert on macadamia nut pests, his first contact with Mac Farms resulting from a Churchill Fellowship visit in 1985.

John Turner is spending 4 months in Eastern Indonesia working on an ADAB project to improve cotton culture in the area. John reports substantial improvements are being made in the pest control of cotton with plenty of work yet to be done.

Eric Sinclair (ex-DPI Stored Products, Brisbane) has been appointed to the Horticulture Branch at Nambour where he will work as a plant physiologist.

Ooi Chee Seng, lecturer in Evolutionary Biology at the University of Malaya in Kuala Lumpur, is spending 6 months at Indooroopilly working on the genetics of the Oriental fruit fly complex with Dick Drew.

DPI, Country Centres

Gary Fitt and Neil Sutton of CSIRO, Peter Gregg from the University of New England and Myron Zalucki of the University of Queensland were in Toowoomba in February to discuss Heliothis ecology projects.

John Rogers is re-adjusting to life at Kingaroy after three years doctoral studies at Clemson, South Carolina, and Hugh Briar is adjusting to a third addition to the family.

Frank Page left Biloela in late April and took up his transfer to Applethorpe where Barry Ingram will show him the ropes before taking over Frank's old position in Central Queensland.

Sugar Bureau

Bundaberg's Bureau of Sugar Experiment Station is Peter Allsopp's (ex DPI, Emerald) new address after he took up his appointment there on 16 March. Peter went to Mackay to the Sugar Research Institute early April for an induction course into the sugar industry. Peter will initially be working on the biology, ecology and control of funnel ants. Keith Chandler from Meringa was in Bundaberg mid April to discuss future projects.

Queensland Agricultural College

Two senior officials of the Indonesian Ministry of Manpower visited college and had wide ranging discussions with the Plant Protection Department regarding short term and full time training programmes in Plant Protection.

Technical Services Manager of ICI Melbourne, Mr K. Alcock and Brisbane Technical Manager, Mr G. Fraser and two technical personnel from Ishihara Saugyo Kaisha Chemical Company, Japan, Dr B. Hashizuma and Mr T. Ohabayashi visited Plant Protection and had discussions with Errol Hassan on cotton and brassica pests.

Mr Steven Hogg, Regional Plant Protectionist/Agronomist, based at Naracoorte in South Australia visited the Department to renew acquaintances with staff and for discussions on matters of mutual interest. Steven completed the Graduate Diploma in Plant Protection at the college in 1982. Mr Hogg provided an address outlining his activities and the opportunities for plant protection consultants in the south-east of South Australia to students and staff.

Mr Ralph Burnett, Managing Director of Crop Protection Consultants from West Beverly, Western Australia visited the Department to discuss aspects of pesticide application technology, farmer communication and small crop consulting activities.

Schering conducted a management computer game at the Foundation building at college. Participants included Schering managing directors, regional sales managers and sale representatives from Australia wide and Plant Protection staff. The course covered five days and Wolfgang Rick, consultant, Germany, controlled the proceedings.

Mr Rod Elder, DPI, was at the Computer Annex on college on the 25th March to present the college with the SORPAK computer programme for sorghum management.

Queensland Museum

Visitors to the Museum have included Malipatil from the NT Museum who spent 4 days in April sorting out specimens and manuscripts relevant to the work of the late Tom Woodward. Johan Billen, from Belgium, was taken collecting by Rudi Kohout to get ants required for pheromone gland studies. Professor Seiroku Sakai from Japan visited with his wife on March 3 to study Dermaptera and was entertained by a gathering of local entomologists, hosted that evening by Pat Marks at her Samford farm.

Robert Raven and Julie Gallon spent a wet fortnight in Tasmania doing a spider survey for the National Parks and Wildlife Service. Robert is currently on a return trip to Tasmania for 3 weeks with Norman Platnick, of the American Museum of Natural History, who has commenced a three month visit based at the Queensland Museum. After their return from Tasmania Robert and Norman have field trips arranged to both New Caledonia and Western Australia.

The Queensland Museum took delivery of the historic Dodd Collection of North Queensland and New Guinea insects in April. The collection, comprising 40 cases of specimens, was developed as a show collection by Frederick Parkhurst Dodd who lived at Kuranda from 1904 to 1936, and was later augmented by his son Alan Parkhurst Dodd who died in 1980. The collection was donated to the Museum by the two surviving children of F.P. Dodd, Miss Elizabeth Dodd and Mrs Katherine McIntyre , both of whom assisted their father form the collection in the early days at Kuranda. A more detailed account of the Dodd family and their collection will appear in a future News Bulletin.

Ted Dahms and Gudrun Sarnes, based themselves for 3 weeks in April at Gordonvale in North Queensland while making collections of chalcidoid wasps. Gordonvale, then called "Nelson", was the home of A.A. Girault for many years and consequently became the type locality for many of his species.

Margaret Schneider and Errol Hassan
Regional Councillors

NORTH QUEENSLAND NEWS

Richard Piper is now based at the Joint Tropical Trials Research Establishment at Cowley Beach, where he is investigating microsporidan parasites of mosquitoes; this work is part of a University of Sydney project under Dr Tony Sweeney. Paul Barker-Hudson and Brian Kay have visited the J.T.T.R.E. recently.

DPI Biloela

Frank Page plans to transfer to Applethorpe Deciduous Fruits Research Laboratory (near Stanthorpe); he will be invovled with the control of pests of deciduous fruits. Anuchit Chinajariyawong will be moving his research base from DPI Research Station Biolela to the Department of Entomology, University of Queensland, in early June.

Isolated newly-fledged swarms of *Locusta migratoria* have been confirmed from Theodore and Bauhinia Downs but serious crop losses have not occurred.

DPI Mareeba

Graeme Lowe, from Caltech in USA, was in the area for several days. He was mainly interested in spiders but was also doing general collecting.

Howard and Mary-Alice Evans, of Colorado State University, are currently in the area undertaking behavioural studies of *Cerceris* and other sphecid wasps.

Ross Storey spent three weeks in February collecting beetles in Humpty Doo, NT.

Several entomologists from the Mareeba area will be attending the Fourth Workshop in Tropical Agricultural Entomology to be held in Darwin from 10-15 May. Those going include Ian Cunningham, Harry Fay, Bruno Pinese and Keith Halfpapp. John Brown, of Ayr, is also attending. Previous workshops were held in Mareeba and Kununurra.

Ray Straatman, of Kuranda, died after a short illness in April. Tony Hiller from Mt Glorious, an old friend of Ray's, spent several days in the area in regard to Ray's will and estate.

James Cook University

Rhondda Jones delivered her inaugural lecture, 'The Tropics ARE Different', on 8 April. While demonstrating that the tropics are indeed different, this also showed that people are just as busy here as elsewhere.

Pyemotes ventricosus, the straw or hay itch mite, has visited the JCU campus recently, parasitizing spider eggs.

Mike Downes
Regional Councillor

TASMANIA

Department of Agriculture

Sandy Leighton and Andrew Rath attended, in March, the 1987 Sheep and Wool Refesher Course sponsored by the Wool Research Development fund of the Australian Wool Corporation. The theme of the course was pasture management and while there was little entomological input in the course both researchers are actively involved in pasture research and found the course highly useful.

Sandy, in conjunction with Ted Woodcock from CSIRO Canberra, has just released a cool tolerant New Zealand strain of a braconid parasite (*Aphidius rhopalosiphini*) of the Rose-grain aphid, *Metopolphium dirhodum* at Cressy Research Station in the State's midland.

Lionel Hill and Peter McQuillan attended the Amateur Field Naturalists meeting at Mt Field National Park on the 28-29th March. Peter, whose wife has just delivered their second baby boy, leaves on his Churchill Fellowship programme on the 30th April. Lionel is currently occupied with a renewed search for *Heliothis armigera* in crops in Northern Tasmania. *Heliothis* was found for the first time in Tasmania, by Lionel, last year in sweet corn.

Aleks Terauds visited the Departments of Agriculture in South Australia, Victoria and New South Wales to discuss and view procedures of Argentine Ant Control and fruit fly trapping. It is undecided at this stage whether Tasmania will continue its attempts to control Argentine ant. This spring a large scale fruit fly trapping programme will come in to effect. The object of the exercise is to prove to Japan that Tasmania is a fruit fly free area.

Gary Pedder, an insect pathology technician working with Andrew Rath, visited Dr Richard Milner in CSIRO (Canberra) for a week in late February. The purpose of the trip was for Gary to become aquainted with electrophoresis techniques that may prove useful in differentiating strains of the entomogenous fungi *Metarhizium* and *Beauveria*. Andrew Rath has received notification that the Wool Research Development Fund will sponsor a project on the ecology of *Metarhizium* and *Beauveria* in Tasmanian pastures. The grant allows for the appointment of another scientist to undertake this work.

University of Tasmania

Li Haifeng, an Occupational Trainee from China, has commenced work with John Madden studying *Eucalyptus* leaf volatiles and extractives, and the influence these compounds have on Chrysomelid host-tree selection.

Anna Leon has commenced an Honours project on the morphology and function of tarsal, antennal and mouthpart receptors of chrysomelid defoliators. Asif Alishah has recently submitted his Ph.D. dissertation on the pests of cabbage crops.

John Madden leaves for Indonesia at the end of April to review the research and to start writing-up a collaborative project (ACIAR) on the prevention of insect losses in fish and fish products

Forestry Commission

Bob Mesibov has resigned from the Society. While Bob regrets his resignation, he has found that he now has little time for entomological pursuits. Bob has for sale his collection of J. Aust. ent. Soc. journals. Bob's current contact address is PO Box 224, Zeehan, TAS 7469.

Andrew Rath
Regional Councillor

NORTHERN TERRITORY

NT Museum

Mali Malipatil has been appointed to the Board of the newly constituted CSIRO journal, Journal of Invertebrate Taxonomy.

Following a meeting of the Board in Melbourne early in April, he spent a few days in Brisbane working with Geoff Monteith on the late Tom Woodward's papers.

NT Health, Medical Entomology

The tailing off of the wet season has allowed increased field surveys. David Booth and Graeme Dobson spent 10 days searching the Barkly Tablelands to the Queensland border for *Aedes aegypti*, and confirmed that the dengue vector had not been inadvertently introduced to the area. All available evidence indicates tht the NT remains free of *A. aegypti*.

David, Graeme, Peter Whelan and Wendy Kelton all collected material for arbovirus isolations, between them covering Mataranka, Peppimenarti, Palumpa and the Darwin area. David and Wendy also spent a week in northwestern NT checking the distribution of *Anopheles farauti* and surveying mosquitoes around the remote settlements there.

Peter investigated high mosquito numbers in Alice Springs and confirmed that most of the trouble stemmed from overgrown primary sewage ponds and the discharge of excess effluent onto open ground.

Neville Rajapaksha of DPI, Canberra, visited to discuss recent evidence of human myiasis in the NT.

NT Department of Industries and Development

As part of a major reorganisation,the former Department of Primary Production is now part of the above newly created body. You can therefore think of us as DID or DIDNT according to your fancy.

Leigh Miller of CSIRO, Canberra, visited as part of a joint study of termites in relation to agricultural production in the NT.

Ted Fenner
Regional Councillor

NEW BOOKS AVAILABLE

NEW BOOKS AVAILABLE OR BECOMING AVAILABLE

D'ABRERA, B. "Sphingidae Mundi - Hawk Moths of the World" 256 pages, 25x34cm. Retail price is £97.50 Stg - Pre-publication price £90.00 Stg	
ALLARD, V. "The Beetles of the World" Vol. 6 Goliathini 2. 1985. 92p.	$108.00
JAEGER, E. "A Source-Book of Biological Names & Terms" 3rd Edition, 6th Printing	$ 78.00
MAZA, R. & TURRENT, R. "Mexican Lepidoptera" Eurytelinae 1. 1985	$ 35.00
SCHOLTZ, C. & HOLM, E. (Ed) "Insects of Southern Africa" 1st Edition, 1986	$ 70.00
SCHOLTZ, C. & HOLM, E. (Ed) "Insects of Southern Africa" Leatherbound	$165.00
ANNECKE, C. "Insects & Mites of Cultivated Plants of South Africa" 1982	$ 89.00
McCUBBIN, C. "Australian Butterflies"	$ 29.95
MATTHEWS, E. "A Guide to the Genera of Beetles of South Australia" Part 3	$ 8.25
Part 4	$ 10.50
McQUILLAN, P. & FORREST, J.A. "A Guide to Common Moths of the Adelaide Region"	$ 8.50
BOND, E. "Manual of Fumigation for Insect Control" 1984. FAO publication	$ 40.00
McMAUGH, J. "What Garden Pest or Disease is That?" 312 pp	$ 36.00

Please allow $5.00 postage irrespective of number of publications.

****

AUSTRALIAN ENTOMOLOGICAL SUPPLIES
POST OFFICE BOX 314
MIRANDA NSW 2228
AUSTRALIA

Phone: (02) 524 4614

OVERSEAS NEWS

PAPUA NEW GUINEA

Mr R.N.B. Prior, one of Department of Agriculture and Livestock entomologists informs me that the oil palm pollinator *Elaeidobius kamerunicus* (Coleoptera: *Curculionidae*) introduced from Africa in the early 1970's has not established very well in drier oil palm growing areas of Papua New Guinea. The weevil has established very well in the West New Britain Province but not in the Northern Province.

Recently, another species of *Elaeidobius*, *E. plagiatus* also from Africa has been introduced after tests in quarantine. This species has been introduced in the Northern Province and is beginning to establish well. Yields of oil palm are expected to increase in these drier areas after this introduction. Studies on insect pollination of oil palm are continuing.

Malchus Arura
Papua New Guinea Correspondent

NEW ZEALAND

On the assumption that it applies equally in Australia the following contribution and cartoon composed by Chris and Olwyn Green, entomologists with MAAF in Auckland, is offered to Australian readers:

MURPHY'S LAWS OF INSECT COLLECTING AND FIELD WORK

1. If you take your sunhat, the weather will be overcast.

2. If you have not taken your parkas it will rain.

3. If two tracks lead to the summit, the one you choose will be the steepest.

4. The chances of the rest of your party waiting at the *other* end of the track, is directly proportional to the length of the track you agreed to meet on.

5. Whichever side of the track you choose to work, your colleague will find more interesting specimens on the other side.

6. The friendly fantail which accompanies you will consume more insects in 5 minutes then you have seen all day.

7. As soon as you put your net down to stop for lunch, an unusual insect will fly past.

8. The log your colleagues rolls over will have at least 3 interesting specimens under it, which will all escape. The log you roll over will land on your foot.

9. The branches you beat will have rain drops on them long after all the other trees have dried off.

10. The more miles you have travelled to collect a species, the greater the chance of finding one on your back doorstep when you return home.

11. You will only find the species you have been searching for all day, *after* all your containers are full.

12. If two plant-feeding insects are placed in the same tube, one of them will become a predator.

John Tenquist
New Zealand Correspondent

NEWS FROM AFFILIATED SOCIETIES

ENTOMOLOGICAL SOC. OF VICTORIA

"ZOO"LE SOUEF MEMORIAL AWARD

The Entomological Society of Victoria is seeking nominations for this Award, instituted in 1983 in memory of the late J.C. ('Zoo') Le Souef who contributed so much to amateur entomology in Victoria. The Award will consist of entomological equipment or books of the recipient's choice, to the approximate value of $200 (reflecting the amount of interest accumulated annually on the principal of the Memorial Fund).

We should be grateful if you would bring the attached conditions to the attention of interested Societies or people. The Secretary will be pleased to provide further information on request.

Dr T.R. New
Honorary Secretary
Entomological Society of Victoria
Department of Zoology
La Trobe University
BUNDOORA VIC 3083

ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES

The 34th AGM was held on March 4th and the new Society Council has changed only slightly from that of 1986. New Council incumbents include Mary Ann Terras, who replaces Doug Rugg as Secretary, and Max Moulds. Dan Bickel has been appointed Assistant Secretary. The Presidential Address by Murray Fletcher was on the Australian Flatidae (Homoptera).

The Society emblem for 1987 is Cizara ardenia (Lewin), the coprosma hawk moth. This beautiful dark green moth is common in Sydney gardens and occurs over a wide range of eastern Australia where its larvae feed primarily on Rubiaceae. The illustration which appears above and which will grace the Society's Circular for the next year was produced by Marnie Holmes.

Col Bower gave an extremely useful talk on "Photographing insects in the field" at the April meeting and Paul Hughes, who has recently returned from a Fulbright Fellowship at North Carolina State University, will entertain us at the May meeting with tales of his derring-do in the States. Individuals who have agreed to talk to the Society later in the year include Roger Toffolon, who has recently been appointed as Urban Entomologist with the NSW Department of Agriculture, and Richard Russell from Sydney University.

A weekend field trip to collect insects in the Pearl Beach area on the Central Coast is planned for the weekend of 2-3 May and further collecting trips will be organised for the warmer weather later in the year.

Murray Fletcher
Representative Councillor

ENTOMOLOGICAL SOCIETY OF QUEENSLAND

The first meeting of the Society for 1987 was the Annual General Meeting held on 9th March at the University of Queensalnd. The following office bearers for 1987 were appointed:

President:	Dr R.E. McFadyen
Senior Vice President:	Prof H.E.H. Paterson
Junior Vice President:	Mrs M. Elson-Harris
Hon. Secretary:	Mr G. Daniels
Hon. Treasurer:	Dr R.J. Raven
Publications Committee Convenor:	Dr I.W. Forno
Councillors:	Mr M. DeBaar Dr N. Gough Dr J. King
Publications Committee:	Dr J. King Miss C. Hayward Anna Lee

The main business of the evening was the Presidential Address of the retiring President, Mrs M. Elson-Harris, entitled 'Immature Diptera - a comparative study of three Australian families'.

In April, Don Sands addressed the meeting on 'Natural history of fruit-piercing moths in south-eastern Queensland'. Don's talk summarized current knowledge on the known and potential economically important moths, examples of several larval food plants as well as damaged fruit were exhibited. In May Robert Raven spoke on "Arthropod collecting in western Tasmania".

The next meeting of the Society will be a Notes and Exhibits night to be held on Tuesday 9th June at the usual venue at the University of Queensland. Visitors are always welcome.

On the weekend of 21-22 March, the Society organized a field trip to the Bunya Mountains which brought together members and families from Brisbane, Toowoomba and Kingaroy. Ideal weather (for the Bunya's) enabled all to have a relaxed, enjoyable social occasion.

Greg Daniels
Representative Councillor

GRESSITT CENTRE DEDICATED

Bishop Museum's Department of Entomology was formally dedicated as the J. LINSLEY GRESSITT CENTER FOR RESEARCH IN ENTOMOLOGY on 26 July 1986. The event was well attended by the local entomological community, a well as by two of the Gressitt daughters, Mrs Rebecca Lau and Mrs Ellyn Brown, and by Dr Felicia Bock and Ms Audie Bock, sister and niece of the late J.L. Gressitt. Dr Allen Allison, Bishop Museum Zoologist, officiated at the ceremony, Drs Alexander Spoehr and Edward Creutz, former directors of Bishop Museum, gave addresses, and Dr Felicia Bock gave closing comments. Highlighting the dedication, a bronze plaque was unveiled citing the late Dr Gressitt as a "Leader in taxonomy, biogeography, and biological exploration; noted founder of research centers and scientific publications; and preeminent builder of Bishop Museum's entomological collections". The plaque says of Gressitt that "He never faltered in climbing great mountains, of the earth and of the mind".

Under the direction of the recently appointed Chairman of Entomology, Dr Scott Miller, the Museum has recommitted to the Department's mission of being a center for the study of the systematics, biogeography, and ecology of insects and related arthropods of the Pacific Basin and their source areas.

MICROSCOPIC INFRARED THERMOMETERS

Instantaneous, non-contact precise temperature measurement of targets as small as 5mm and down to 125 microns, from -30° to 100°C with .0° resolution.

Lasite Intra-Optical Lighting sighting system produces a pulsating invisible light that goes directly through the infrared optics illuminating the exact field of view.

These instruments come with a universal (360°) positioning microscope head mount option and continuous output to indicators/ controllers/dataloggers such as the Omnidata Easylogger.

OMNIDATA EASYLOGGER RECORDING SYSTEM

Mutli-channel, portable recording system for environmental studies using solid state RAM or EPROM packs, menu driven, data easily transferred to computer.

* * *

Dr Peter Cull
Irricrop Technologies Pty Ltd
P.O. Box 487
NARRABRI NSW 2390

Phone (067) 92 2167

OBITUARY

RAYMOND STRAATMAN
(30 Jan. 1917 - 3 April 1987)

Born in The Hague, Holland and educated in Brussels, Belgium, Ray then attended the Netherlands College for Horticulture and Tropical Agriculture of Boskoop, Holland, receiving a diploma on completion of the course.

In the year 1945-6 he was stationed at Wacol Camp in Brisbane as a welfare officer assisting evacuees from New Guinea.

1947 saw Ray employed as a technical research assistant by the Netherlands-Indies Government at the Museum of Natural History of the Royal Botanical Gardens at Buitenzorg (now Bogor) in Java. His interests in Lepidoptera were greatly stimulated at this time, as his work entailed travel to New Guinea, Biak and the Celebes.

His next post was that of a rubber planter in NE and NW Sumatra, a position he held for six years, showing great interest in matters of native welfare and utilization of war-damaged areas for rubber planting. During this period he discovered many butterfly life histories, including that of the famous Rajah Brookes' Birdwing, Trogonoptera brookiana.

Ray then came to Australia about 1954 and began work as an entomological assistant to Ian Common at CSIRO in Canberra, then with George Stride in Brisbane, finally with Ken Harley at Ingham. While stationed at Ingham, Ray made some interesting collections by light-trapping, the material being lodged in ANIC.

It was during the period in Brisbane that Ray developed a great interest in the hybridization of the papilionid butterflies, successfully experimenting and publishing the results. This interest remained with Ray throughout his life, and resulted in some fascinating discoveries.

On overseas leave Ray visited Spain, Panama, Costa Rica, Honduras, Guatemala and Peru, and first heard the South American music that he always so enjoyed. Specimens collected on these travels were donated to ANIC.

In 1961 Ray was once again employed as a planter, this time at the Doa Estate west of Port Moresby, New Guinea. At the beginning of 1963 he took a position as field collector to the Bernice Bishop Museum in Honolulu and was based at their field station at Wau. In this capacity he spent 4-5 years travelling and collecting in New Guinea, New Caledonia, New Hebrides, and the Solomons. This also included six months work in Indonesia from September 1965 to February 1966, during which he visited Java, Celebes and the Moluccas.

At the completion of his employment with the Bishop Museum in May 1968 Ray then settled in Sogeri, PNG where he planted many Aristolochia species and spent much time studying the early stages of the papilionid genus Ornithoptera. His name will always be associated with this spectacular genus having been priviledged enough to have seen most species within that genus in the field, and having contributed much information now incorporated in the detailed works on Ornithoptera published at this time. These included the first published life history studies on Ornithoptera alexandrae, the largest butterfly in the world, as well as Ornithoptera victoriae, O. goliath, O. chimaera and many other swallowtails. Ray was a gifted photographer, carefully recording in colour slides the life cycles of his beloved butterflies. Examples illustrate many of his papers. His incomparable slide collection has passed, at his request, to Tom Davis at the California Academy of Science, Los Angeles.

Ray's expertise and knowledge was recognized during this period when he was contracted by the Papua New Guinea government to investigate the conservation status of the severely threatened Ornithoptera alexandrae.

In 1975 my wife and I were fortunate to be able to visit Ray and to spend some time in the field with him. A firm friendship resulted from this visit, and great respect for such enthusiastic application to entomology was engendered, as Ray excitedly described his recent discovery of the life history of that curious mimetic Papilionid Papilio laglaizei. The Government collection at Konedobu, Port Moresby houses many of Ray's specimens donated during his years in PNG.

Ray moved to Kuranda around 1980 and began studying the local lepidoptera there, continuing his hybridization experiments with the Papilionids.

During his last few years he continued to travel, visiting Indonesia including West Iran and Sulawesi, USA, Japan, Holland and the UK, making, as always, many friends in each place.

His whimsical sense of humour and his ability to express it in Dutch, German, Spanish, Indonesian, French, Pigdin, or even English (!) will be sadly missed by all who knew him, and the discontinuation of his work on the taxonomy and biology of the Papillionidae will be a blow to other workers in that field.

Ray's tragic death of lung cancer occurred at Cairns Base Hospital, N.Qld. on 3 April, 1987 and he was cremated at the Forestview Crematorium, Cairns on 7 April 1987. Approximately 50 friends attended the simple service.

Ray bequeathed his estate to the World Wildlife Fund.

Anthony Hiller
Mount Glorious

RAY STRAATMAN - LIST OF PUBLICATIONS

Straatman, R. and Niewenhuis, E.J. (1961). Biology of certain Sumatran species of Atrophaneura, Trogonoptera and Troides (Lepidoptera, Papilionidae). Tijdschr. V. ent. 104(3): 31-42.

Stride, G.O. and Straatman, R. (1962). The host plant relationship of an Australian swallowtail, Papilio aegeus, and its significance in the evolution of host plant selection. Proc. Linn. Soc. NSW. 87: 69-78.

Straatman, R. (1962). A hybrid between Papilio aegeus aegeus and Papilio fuscus capaneus, with a note on larval foodplants. J. Lep. Soc. 16(3): 161-174.

Straatman, R. (1962). Notes on certain Lepidoptera ovipositing on plants which are toxic to their larvae. J. Lep. Soc. 16(2): 99-103.

Straatman, R. (1963). Observations on migration in certain Australian Lepidoptera. Tijdschr. v. Ent 106(4): 197-199.

Straatman, R. (1968). On the biology of some species of Papionionidae from the island of Celebes (East-Indonesia). Entomol. Ber. 28: 229-233.

Straatman, R. (1969). Notes on the biology and hostplant associations of Ornithoptera priamus urvilleanus and O. victoriae (Papilionidae). J. Lep. Soc. 23(2): 69-76.

Straatman, R. (1971). The life history of Ornithoptera alexandrae Rothschild. J. Lep. Soc. 25(1): 58-64.

Straatman, R. and Schmid, F. (1975). Notes on the biology of Ornithoptera goliath and O. chimaera (Papilionidae). J. Lep. Soc. 29(2): 85-88.

Straatman, R. (1975). Notes on the biologies of Papilio laglaizei and P. toboroi (Papilionidae). J. Lep. Soc. 29(3): 180-187.

Straatman, R. (1976). Hybridisation of Birdwing Butterflies (Lepidoptera : Papilionidae) in Papua New Guinea. Trans. Lep. Soc. Japan 27(4): 156-162.

Australian Institute of Biology

AUSTRALIAN INSTITUTE OF BIOLOGY INC.

The Australian Institute of Biology was formed on 31 August 1986 and was derived from the Institute of Biology in Australia. The latter was a branch of the well-known Institute of Biology which was formed in the UK in 1950. The IOB, with currently some 16,000 members, and honoured by Royal Charter, publishes extensively. Its journal, BIOLOGIST, is widely read and, in addition, the IOB publishes a STUDIES IN BIOLOGY series, the JOURNAL OF BIOLOGICAL EDUCATION and handbooks as well as organising meetings on a wide range of biological topics.

The wholly independent Australian Institute of Biology (AIB) became a non-profit incorporated association under Commonwealth legislation in March of this year. It seeks to represent the profession of biology in Australia by promoting education and research in biology, by improving communication between biologists, and by speaking on behalf of qualified professional biologists to other professional organisations and to all levels of government.

The AIB has initiated an AUSTRALIAN STUDIES IN BIOLOGY publication series. Already two titles have been published: "Confronting Creationism: Defending Darwin" (Selkirk and Burrows, Eds.) and "Sea Snakes" by Harold Heatwole. A further title will be "Infectious Disease and Australian History" (Goldsmid), while the proceedings of a 1986 conference on bioethics will also appear. The AIB publishes an AIB NEWSLETTER for its members and the first section of a REGISTER OF PROFESSIONAL ENVIRONMENTAL BIOLOGISTS IN AUSTRALIA was included in the March 1987 issue.

The First Annual General Meeting of the AIB will be held at the Australian National University, Canberra on 10-12 July 1987. On Saturday 11 July it will sponsor a full-day symposium "The Australian Biota: Contemporary Studies in Evolution, Biogeography and Systematics". Speakers will include well-known figures from a variety of disciplines including biogeographers, botanists and zoologists (both vertebrate and invertebrate). This Symposium will be open to non-members (Registration fee $16) who should obtain enrolment forms from Dr Dave Shaw, Population Genetics Group, R.S.B.S., A.N.U. GPO Box 475, Canberra ACT 2601.

The Institute confers on its members a status similar to that of members of other professional institues such as the Australian Institute of Physics. Membership grades are: Fellow, Member, Associate and Student. Members and Fellows are designated by the letters MAIBiol and FAIBiol respectively, and dues range from $10 to $40. Further information on membership matters may be obtained from: The Membership Officer, AIB, Science Centre, 35 Clarence Street, Sydney 2000.

P.B. Carne
Public Officer
Australian Institute of Biology

CONTRIBUTED ARTICLE

IMBLATTELLA ORCHIDAE ASAHINA, AN INTRODUCED COCKROACH ASSOCIATED WITH ORCHIDS IN AUSTRALIA (BLATTODEA: BLATTELLIDAE)

by D.C.F. RENTZ
CSIRO, Division of Entomology, GPO Box 1700, Canberra, ACT 2601.

A population of a small cockroach, Imblattella orchidae Asahina, the orchid cockroach, was discovered in 1985 living under greenhouse conditions in the National Botanical Gardens (NBG), Canberra. The orchid cockroach has been recorded commonly in greenhouses in the Tokyo area under the name Imblattella panamae (Hebard) (Asahina 1973). It was suspected that the species was introduced into Japan in orchids imported from Central America where it is known only from Panama. However the Japanese population has recently been described as a separate species, I. orchidae, by Asahina (1985) though its precise geographic origin is unknown. (The Australian material was determined by Dr L.M. Roth, Harvard University, who is making a taxonomic revision of the Australian Blattellidae). This cockroach lives among the roots of ephiphytic orchids often grown on bark slabs or pieces of cork. It may feed on the growing root tips and damage flower buds and developing shoots of the vegetative parts of the plants. The cockroaches also live amongst the pinebark and other planting media suitable for ephiphytic orchids grown in pots. The oothecae (Fig. 1) are secured tightly amongst the tangle of roots where they could easily adhere during repotting of the plant.

How the cockroach entered Australia is uncertain. All foreign orchids imported into Australia undergo quarantine and it would seem that any eggs or live cockroaches should be killed during the process. The NBG does, however, receive live orchids specimens from many parts of Australia and these are not necessarily treated for pests. It is quite likely that I. orchidae was introduced into the NBG, in orchids sent from other collections in Australia. There is some indiction that the cockroack is a bit more widespread than indicated above. The author is a collector of orchids and maintains a small greenhouse in Canberra some 15 km from the NBG with many epiphytic orchids. He has never exchanged any plants with the NBG but does so regularly with members of the Canberra Orchid Society and orchid growers from several nurseries in eastern Australia. In January and February 1987 he collected adults of I. orchidae at his porchlight and in his glasshouse.

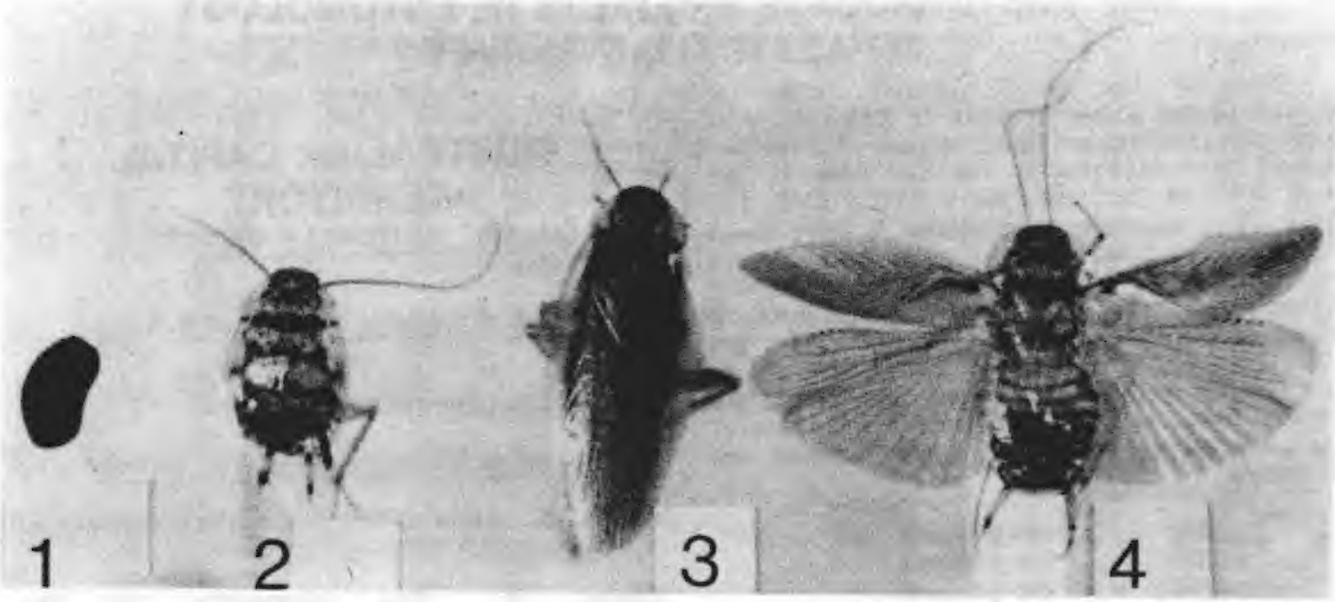
It seems prudent to present a few descriptive notes on I. orchidae and ask orchidologists to check their collections to determine the extent of the species' presence in Australia. Like many blattellids, I. orchidae is nocturnal. By day is hides in the roots or planting medium and emerges at night to feed. Orchidologists would likely encounter the cockroaches during repotting or by observing their plants at night. This species is very fast-moving; it moves more quickly than any other native cockroach with which the author is familiar. Unfortunately, I. orchidae has the general appearance of any of a number of native Australian blattellid species. This fact may have led to its being overlooked until now. The orchid cockroach is medium-sized, slightly smaller than the German cockroach, and is about 10.5 mm long in both sexes. Adults and nymphs have irregular pronotal markings (Figs. 2-5) which are also present on many native cockroaches. Nymphs are marked as in Fig. 2. The male genitalia are asymmetrical. Figs. 6, 7 show ventral views of the tip of the male abdomen each of a specimen preserved in alcohol and one dried. The spiniform appendage of the left of the figure at the base of the cercus is divided at the tip, that on the right is not. The phallosome (Fig. 7) is characteristic of the species and normally protrudes slightly from the male's abdomen. The female's abdomen (Fig. 5) is not especially distinctive but the banded cerci should aid in identification. The stout, curved ootheca may also be useful in identification. Whether this tropical species could survive outdoors during a Canberra winter is unknown.

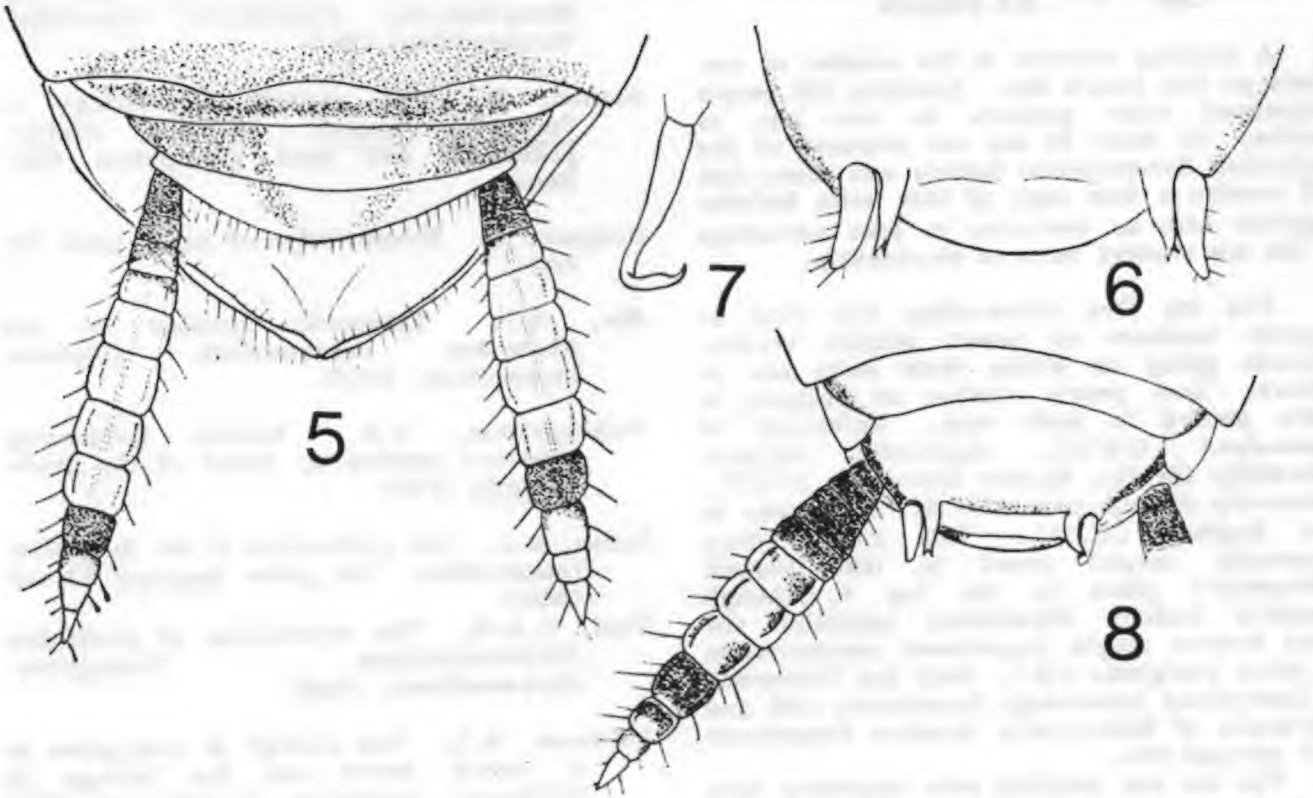
I would be interested in seeing any cockroach specimens suspected of being I. orchidae. They can be conveniently preserved in 70% alcohol or methylated spirits and sent to me at the above address.

References

Asahina, S. 1973. Taxonomic notes on Japanese Blattaria. V. On three recently introduced species. Jap. J. Sanitary Ent., 24: 123-128.

Asahina, S. 1985. Taxonomic notes of Japanese Blattaria. XV. A revision of three blattellid species. Gen-Gen Sha Miyarmaru 8: 2-10.





Legends to Figures

Figs. 1-4. *Imblattella orchidae* (Hebard). Fig. 1. Ootheca. Fig. 2. Late instar nymph. Fig. 3. Adult male. Fig. 4. Adult female. All figures from Asahina (1973).

Figs. 5-8. Taxonomic structures of *Imblattella orchidae* (Hebard). Fig. 5. Ventral view abdomen adult female. Fig. 6. Ventral view abdomen adult male, alcoholic specimen. Fig. 7. Phallosome, adult male. Fig. 8. Ventral view abdomen adult male, dried specimens. All figures from Asahina (1973).

1987 POSTGRADUATE PROJECTS IN ENTOMOLOGY AN AUSTRALIAN SURVEY

This is the fourth annual listing of current postgraduate projects in Entomology in Australian tertiary institutions. Previous listings have appeared in the May issue of the News Bulletin for the years 1984, 1985 and 1986. The number of projects I have been able to locate continues to grow at about 8% each year with this year showing a slightly sharper increment of 9.5% to a grand total of 253 in 19 different institutions. So if you are a postgrad out there making heavy weather to meet your deadline, you can at least take comfort from the fact that you are not alone! The progessive totals for the last 4 years are as follows:

1984 - 199 projects
1985 - 214 projects
1986 - 231 projects
1987 - 253 projects

A striking statistic is the number of new names on this year's list. Precisely 100 people commenced their projects in the last 12 months. Of these 94 are not members of the Australian Entomological Society and these folk will receive a free copy of this News Bulletin together with an invitation to take advantage of the low student rates of membership.

The top five Universities this year as regards numbers of insect related student projects going on within their walls are as follows. Last year's number of projects is given second in each case. University of Queensland (34/26), Australian National University (28/21), Sydney University (27/15), University of Melbourne (24/20), University of New England (21/21). This year Sydney University surged ahead to take Monash University's place in the top 5, though Monash's Zoology Department maintains the third largest single Department concentration of insect postgrads (15). Only the University of Queensland Entomology Department (29) and University of Melbourne's Genetics Department (20) surpass this.

The list was compiled with assistance from many people who are indicated in brackets after their respective Universities and to whom I am grateful. Naturally I am anxious to receive any errors or additions to this list and these will appear as a supplement in the next News Bulletin.

Geoff Monteith
News Bulletin Editor

AUSTRALIAN CAPITAL TERRITORY

AUSTRALIAN NATIONAL UNIVERSITY (Dr P.J. Gullan

Department of Botany, Faculty of Science

Pickering, C. Pollination biology of alpine *Ranunculus* (PhD)

Department of Zoology, Faculty of Science

Ardlie, K. Mate choice and antiaphrodisiacs of *Drosophila melanogaster* (BSc Hons)

Bhatti, S. The systematics of the Monophlebulini (Homoptera: Coccoidea: Margarodidae) (PhD)

Hansen, K. The reproductive biology of *Eucryphia moorei*: breeding system, pollination and seed germination (BSc Hons)

Hodgson, P. Ectoparasites of bats (Grad Dip Sci)

Kim, S.P. Taxonomic revision of the Australian Homoneurinae (Diptera: Lauxaniidae) (PhD)

McCorquodale, D.B. Factors influencing communal nesting by wasps of the genus *Cerceris* (PhD)

Moran, R.J. The systematics of the Australian Gnaphosidae: the genus *Lampona* Thorell (MSc)

Reid, C.A.M. The systematics of Australian Cryptocephalinae (Coleoptera: Chrysomelidae) (PhD)

Robinson, M.G. The ecology of Coleoptera in a coastal forest and the biology of *Xyleborus truncatus* (Scolytinae) (BSc Hons)

Rozario, S.A. Population ecology and taxonomy of *Eurymeloides punctata* (Signoret) (Hemiptera: Eurymelidae) (MSc)

Smith, J.M. Invertebrate grazing in a semi-arid environment (Grad Dip Sci)

Vickers, R. The influence of codling moth female sex pheromone on mating behaviour and its potential as a mating disruptant (PhD)

Department of Neurobiology, Research School of Biological Sciences

James, A.C. Electrophysiology of the locust lamina (PhD)

Hennig, M. The cellular basis for coordination of motor patterns in two closely related species of Australian crickets (PhD)

Shi Jian. Information processing in the insect optic lobe (PhD)

Thacker, S.C. The development of the visual system in the scarab beetle (PhD)

Warrant, E.J. Visual activity in insect superposition eyes (PhD)

Population Genetics Group, RSBS

Jiang, J. Restriction site maps in the vicinity of the ADH locus in *Drosophila melanogaster* (PhD).

Kohlmann, B. Ecological component for the maintenance of a narrow hybrid zone in *Caledia captiva* (Orthoptera: Acrididae) (PhD)

Marchant, A.D. Mitochondrial DNA variation in the *Caledia captiva* species group (Orthoptera: Acrididae) (PhD)

Rowell, D.M. Chromosomal and protein evolution in the family Sparassidae (Arachnida) (PhD)

Symonds, J. The characterization of an alphaglycerophosphate dehydrogenase variant in *Drosophila melanogaster* (PhD)

Virus Ecology Research Group, RSBS

Christian, P.D. Viruses in drosophilids (PhD)

Division of Entomology, CSIRO (with joint supervision in the ANU)

Cooke, P.H. Molecular basis of Esterase 6 electrophoretic polymorphism in *Drosophila melanogaster* (PhD)

Game, A.Y. Causes and effects of variation in Esterase 6 activity in *Drosophila melanogaster* (PhD)

Karotam, J. Nucleotide differences and the molecular clock in *Drosophila* (PhD)

van Papenrecht, E.A. Differences in the regulation of Esterase 6 among sibling *Drosophila* species (PhD)

NEW SOUTH WALES

UNIVERSITY OF NEW ENGLAND

Department of Agronomy and Soil Science

Bodnaruk, K.P. Monitoring traps for phytophagous mirids in cotton (Dip Sc Ag)

Bright, M. Effects of high temperature on the survival and development of *Heliothis* spp. (M Rur Sc)

Del Socorro, A. Ecology of armyworms in the New England area (M Rur Sc)

Esmail, M.A. Ecology of *Heliothis* spp. in the New England area (M Rur Sc)

Department of Animal Science

Armstrong, T. Olfactory responses of *Drosophila melanogaster* (BSc Hons)

Del Bosque, A. An experimental analysis of group breeding schemes (*Drosophila*) (M Rur Sc)

Grimmond, S. Genomic characterisation of the *ras* gene in *Drosophila melanogaster* (BSc Hons)

McRae, T.A. Life history evolution in *Tribolium castaneum* (PhD)

Pangestu, R.B. Genetic and morphological variation in *Drosophila* in stress environments (M Rur Sc)

Schafer, D.J. Developmental and molecular studies of *ADH* in *Drosophila buzzatii* (MSc)

Seymour, R. Structural and developmental analysis of the *ras* gene of *Drosophila melanogaster* (BSc Hons)

Sweetnam, R. Variation in life history traits in a natural population of *Tribolium castanaeum* (PhD)

Department of Ecosystem Management

Jenkins, B. Dynamics of food webs in water-filled treeholes (PhD)

Department of Zoology

Arney, M. Investigations into light brown apple moth and codling moth: biology in the New England area in relation to pest management (BSc Hons)

Coombes, M. Flight behaviour of Heliothis spp. in relation to the physical environment (PhD)

King, K. The role of microarthropods in decomposition and nutrient cycling in temperate grasslands (PhD)

Spessa, A. Simulation of population dynamics of Heliothis spp. within a multicropping situation (BSc Hons)

Sukarai, Y. Ant communities in dieback and non-dieback areas (PhD)

Sullivan, P. Investigations of the cochineal insect, Dactylopius ceylonicus, as a possible biological control agent of the smooth tree pear, Opuntia vulgaris, in NSW (MSc)

Sutton, N. Modelling of light brown apple moth population dynamics (MSc)

Departments of Ecosystem Management and Zoology

Nadolny, C. Insect impact on seed set in rainforest trees (PhD)

THE UNIVERSITY OF SYDNEY (Dr H.A. Rose)

Department of Agricultural Chemistry

Kelly, S. Esterases in the lesser grain borer, Rhyzopertha dominica (BSc Hons)

Kozlowski, B. Esterases in the sawtoothed grain beetle, Oryzaephilus surinamensis (PhD)

Department of Agricultural Genetics and Biometry

Gwynn, C. Mapping genes responsible for inheritance of scutellar bristle number in Drosophila melanogaster (M Sc Agr)

Department of Animal Husbandry

Sherwood, N. Evaluation of a scoring system for lice distribution in sheep (M Sc Agr)

Torkamanzehi, A. The role of transposable elements in the generation of quantitative genetic variation in Drosophila melanogaster (PhD)

Department of Biochemistry

Chappell, D. Nitrogen metabolism in termites (Isoptera) (PhD)

School of Biological Sciences

Cook, A. Conditions under which transposition is induced in Drosophila melanogaster (BSc Hons)

Gibbons, D. Visual and tactile signals in Fabaceae (MSc)

Jacklyn, P. Orientation of the meridional mound building termites of Northern Australia (PhD)

Kelly, G. Activities of a parasitic wasp, Trissolcus basalis in one and two host systems (PhD)

Leck, D. The inducibility of monooxygenase activity in three strains of Oryzaephilus surinamensis (BSc Hons)

Thwaite, R. Heat shock gene promoters in two Australian Drosophila: the molecular basis for survival in catastrophe (BSc Hons)

Yuille, J. Visual stimuli of the fruit seeking behaviour of Dacus tryoni (BSc Hons)

Department of Plant Pathology and Agricultural Entomology

Allanson, R.B. Investigating strategies for nuisance fly control of poultry farms with emphasis on integrated approach (M Sc Agr)

Eldridge, R.H. Studies on the taxonomy and biology of the Australian Glyptotermes (Isoptera: Kalotermitidae) (M Sc Agr)

Herron, G. Correlation between the insecticide fenitrothion and resistant alleles in populations of Oryzaephilus surinamensis (Dip Agr Ent)

Kotze, A. Glutathione transferases of the sheep blowfly *Lucilia cuprina* (Diptera: Calliphoridae) (PhD)

Macdonald, J.A. Biology of the Pergidae (Hymenoptera: Symphyta) (M Sc Agr)

Olime, T. Cytotaxonomic investigations of soil burrowing cockroaches (Blaberidae: Panesthiinae) (Dip Agr Ent)

Reidy, G. Effect of Malathion and Paraquat on mixed function oxidases of rats and insects (PhD)

Rugg, D. Some aspects of the biology of *Panesthia cribrata* (Blattodea: Blaberidae) (MSc Agr)

Sinclair, D.P. Taxonomic revision of the Tessaratomidae (Hemiptera: Heteropoda) (PhD)

Smith, G. Taxonomy of Australian silverfish (Thysanura: Nicoletiidae) (MSc Agr)

Stevens, M.M. Taxonomy and biology of the Thymbrini (Homoptera: Cicadellidae) (PhD)

Viseton, S. Biochemical insecticide resistance mechanisms in the rust-red flour beetle, *Tribolium castaneum* (PhD)

School of Public Health and Tropical Medicine

Panter, C. Microbial aspects of the development of the fungus *Culicinomyces* for the biological control of insect vectors of disease (PhD)

Tordoff, I. Studies on feeding behaviour of *Anopheles farauti* in New Britain (MPH)

UNIVERSITY OF NEW SOUTH WALES (Dr R.H. Crozier)

School of Zoology

Barraclough, D. Revision of Australasian Dexiini (Diptera: Tachinidae) (PhD)

Brown, G. A revision of the Australian Thynninae (Hymenoptera: Tiphiidae) with special reference to the genus *Rhagigater* Guerin (PhD)

Crosland, M.W.J. Colony recognition in *Rhytidoponera* ants (PhD)

Haering, R. Monitoring changes in ant community structure when dominant species are removed (MSc)

Nerona, E. Irradiation entomology (MSc)

York, A.K. Recolonization of native forests after fire [ants] (PhD)

MACQUARIE UNIVERSITY (Dr D.F. Hales)

School of Biological Sciences

Barker, S.C. Biogeography of lice on Queensland rock wallabies (PhD)

Claxton, S.K. The biology of terrestrial tardigrades (MSc)

Donlea, Eva. Reproduction and development in *Peripatus* (MSc)

Horwood, M.A. Comparison of effects of juvenile hormone deficiency and parasitisation in the Australian plague locust (MSc)

Kennedy, C.M.A. Biology of Australian Pseudoscorpionida (PhD)

Sales, N. The potential for resistance to synthetic pyrethroids in the sheep blowfly, *Luciila cuprina* (MSc)

Shuter, E. Arthropods on bracken (MSc)

Stone, C. *Pinus* inner-bark community associated with *Ips grandicollis* in NSW (PhD)

Watt, F. Chromosomal proteins associated with gene activity in *Drosophila melanogaster* (MSc) (approved)

SOUTH AUSTRALIA

UNIVERSITY OF ADELAIDE (Dr David Cooper)

Department of Entomology

Adidharma, D. Host plant interactions in biological control of *Tetranychus urticae* Koch (PhD)

Allen, G.R. Biology and ecology of the parasites of *Uraba lugens* (PhD)

Frost, W. Studies on the endosymbiotic bacteria of mealy bugs (B Ag Sc Hons)

Green, A. Infection processes of *Metarhizium anisopliae* in *Antitrogus* and *Lepidiota* sp. (Scarabaeidae) (B Ag Sc Hons)

Hill, S. Pollination of Almond (M Ag Sc)

Lawson, S. Biological control of *Ips grandicollis* Eich. (M Agr Sc)

Morris, B. Taxonomy and physiology of blowfly larvae (M Agr Sc)

Nkunika, P. Studies of the castes and ecology of the dampwood termite, *Porotermes adamsoni* (Froggatt), in South Australia (PhD)

Peng, Z. Allelochemic responses of rose tissue to attack by rose aphids.

Rippon, G.D. Interaction of plant allelochemicals with the peritrophic membrane (PhD)

Rondonuwu, S. Bionomics of *Uracanthus* sp. (Coleoptera) (M Agr Sc)

Weinstein, P. Bionomics of host-parasite interactions in trigonalid wasps (PhD)

Zhao, J.W. Insect population dynamics: the influence of weather on the interaction of red scale of citrus (*Aonidiella aurantii*) and its parasitoids (PhD)

Department of Plant Pathology

Geering, A.D.W. A study of the epidemiology of cucumber mosaic virus in lupins (PhD)

Gibb, K.S. *Cyrtopeltis nicotianae* (Miridae) transmission of velvet tobacco mottle virus (PhD)

Department of Zoology (Dr A. Wells)

Browning, G.P. Taxonomy of *Myrmecia* Fabricius (Hymenoptera: Formicidae), with emphasis on the *vindex* species group (PhD)

Reynolds, J.G. Predation by the notonectid *Anisops deanei* (Hemiptera: Notonectidae) on freshwater zooplankton (PhD)

FLINDERS UNIVERSITY

School of Biological Sciences (Dr D.A. Mackay)

Belan, I. Host selection by reptile ticks (PhD)

Chilton, N. Ecological interactions among reptile ticks at a parapatric boundary (PhD)

Gross, C. Ecological implications of differences in flowering phenology in a mallee woodland community (PhD)

O'Carroll, D. Optics of spider vision (PhD)

QUEENSLAND

UNIVERSITY OF QUEENSLAND

Department of Entomology (Professor H. Paterson)

Allingham, P. The effects of temperature on the survival of adults of *Culicoides brevitarsis* Kieffer (Diptera: Ceratopogonidae) larvae and papae (BSc Hons)

Ballard, J.W.O. Simuliids: possible cryptic species (PhD)

Benfield, M. Electrophoretic comparison of populations of *Heliothis punctigera* collected from different host plants (BSc Hons)

Chinajariyawong, A. Biology and behaviour of sap-sucking bugs and determination of their economic thresholds on cotton (PhD)

Daglish, G.J. Influence of hostplant and temperature on the development of *Heliothis* species (PhD)

Evans, D. The impact of predators on Lepidoptera in the cotton ecosystem (M Agr Sc)

Evans, M. Ecology of insects on soybeans (PhD)

Forrester, N. Management of insecticide resistence in *Heliothis armigera* (PhD)

Gibson, L. Some aspects of the life history and biology of *Zygogramma biocolorata* - a biological control agent for annual ragweed (M Agr Sc)

Grimshaw, J. Revision of the Oxyopidae in Australia (MSc)

Hayward, C. An investigation of the courtship behaviour of 3 closely related fruit fly species (MSc)

Heard, T. Aspects of the pollination biology of macadamia and cashew (PhD)

Kyi, A. Factors affecting the survival of the early stages of *Heliothis armigera* (M Agr St)

Lin, Y. The effect of neem extract on the development of aphids on cotton (M Agr St)

Maynard, G.V. Studies on Australian bees of the genus *Leioproctus* Smith (PhD)

Merritt, D. The ultrastructure of the sense organs on the ovipositor of the Australian sheep blowfly *Lucilia cuprina* and the central projections of their neurons (PhD)

Molyneux, A.S. A neurobiological study of certain sensilla of *Heliothis* spp. larvae (PhD)

Montgomery, B. Status of *Lucilia cuprina* populations in Australia (MSc)

Murray, D. Factors affecting *Heliothis* spp. pupal development and survival on the Darling Downs (PhD)

Njagi, P. Sensory biology of some labellar gustatory sensilla of male *Dacus tryoni* and their role in feeding on Cue-lure (PhD)

O'Neill, S. Cytoplasmic incompatibility: symbiont induced sterility in insects (PhD)

Oyeyele, S. Host plant selection by *Danaus plexippus* L. in relation to cardiac glycoside concentration (M Agr St)

Scholz, B.C. The biology and ecology of egg parasitoids of *Heliothis* on cotton (M Agr Sc)

Singh-Asa, S. Sterilization of *Lucilia cuprina* (Wiedemann) (Diptera: Calliphoridae) by gamma radiation (PhD)

Taylor, M. Early nutrition and life history of *Samea multiplicalis* (PhD)

Titmarsh, I.J. *Heliothis* population dynamics in Darling Downs cropping (PhD)

Velasco, L.R. Role of prior host plants in the population build-up of *Nezara viridula* in South East Queensland (PhD)

Walker, P. Biology and ecology of the Pink-spotted Bollworm, *Pectinophora scutigera* (Holdaway) (PhD)

Yeates, D.K. Revision of the Lomatiinae (Diptera: Bombyliidae) in Australia (PhD)

Department of Microbiology

Harding, R. The cause and control of papaw dieback disease (PhD)

Hicks, S. Properties, planthopper transmission and host range of the Australian Pangola Stunt Virus (BSc Hons)

Murphy, K. The association of nitrogen-fixing bacteria with the Queensland Fruit Fly (MSc).

Sdoodee, R. Properties and thrips transmission of tobacco streak virus in Australia (PhD)

Srisink, S. Properties, aphid transmission and control of Sugarcane mosaic virus in Queensland. (M Agr Sc)

GRIFFITH UNIVERSITY (Dr J. Hughes)

School of Australian Environmental Studies

Basset, Y. The temporal and spatial distribution of canopy arthropods associated with the rainforest tree *Argyrodendron actinophyllum* Edlin *(Sterculiaceae)* (PhD)

Lombert, H. Coevolution within a host-parasite association: *Zosterops lateralis* (*ramsayi*, *familiaris*, *lateralis*) *(Aves)* - *Trouessartia megadisca (Acari)* (PhD)

Lyonns, K.A. Host selection in a palm skipper *Cephrenes augiades* (Lepidoptera) (PhD)

Orr, A.G. Reproductive behaviour of papiloinid butterflies with special reference to *Cressida cressida* (PhD)

Pillsworth, M. The dynamics of a sessile predator *Myrmeleon pictifrons* (ant-lion) *Gerstaecker (Neuroptera: Myrmeleontidae)* (PhD)

Reinks, J. Visual display behaviour in jumping spiders (Araneae - Salticidae): Morphological and microhabitat correlates (PhD)

Scheermeyer, E. Seasonality or opportunism in reproduction of Australian danaine butterflies: Euploea core, E. tulliolus and Tirumala hamata (Lepidoptera) (PhD)

Wallace, C. A test of alternative models for the maintenance of species richness in an animal community; with particular reference to ants (PhD)

School of Science

Lester, L. Biochemical characteristics of alcohol dehydrogenase in Drosophila melanogaster (MSc)

JAMES COOK UNIVERSITY (Prof R.E. Jones)

Zoology Department

Downes, M. Biology of subsocial spiders (PhD)

Felderhof, L. Insect herbivores of Melaleuca quinquenervia (PhD)

Harrison, K. Pollination biology of some rainforest plants (BSc Hons)

Hudson, P. Population dynamics of medically important mosquitoes of the Ross River Dam (MSc)

Kay, I. Development biology of Eysarcoris trimaculatus (MSc)

Lokkers, C. Ecology of the green tree ant, Oecophylla smaragdina (PhD)

Rae, D. The ecology of sugarcane mealybugs (PhD)

Seymour, J. Geographic variation in parasitoids of Australian Heliothis species (PhD)

Botany Department

Duivenvoorden, L. The impact of insect herbivores on Salvinia (PhD)

QUEENSLAND AGRICULTURAL COLLEGE

Department of Plant Protection (Dr E. Hassan)

Altman, J. An evaluation of synthetic pyrethroid resistance in cabbage moth in the Lockyer Valley (Post Grad Dip in Plant Protection)

Lal, S. The effect of chlorpyrifos (insecticide) on California red scale parasites in the field (Post Grad Dip in Plant Protection)

Logan, D. Resistance of cabbage moth to a synthetic pyrethroid at two sites - the Lockyer Valley and the Beerwah district (B App Sc Rur Tech)

Tafatu-Hipa, F. Integrated control of tuber moth, using pheromone traps (B App Sc Hor Tech)

Vorpagel, B. Integrated control of two spotted mites in strawberries using predatory mites and miticides (B App Sc Rur Tech)

VICTORIA

DEAKIN UNIVERSITY (Mr D.J. Moloney)

School of Biological Sciences

Moloney, D.J. An investigation of vegetation regeneration and small mammal recolonisation in fire-affected areas of the Airey's Inlet-Anglesen region, southern Victoria (includes insect pitfall trapping and scat analysis) (PhD)

UNIVERSITY OF MELBOURNE (Dr J. Martin)

Department of Genetics

Adcock, G. Insecticide resistance in Drosophila melanogaster (MSc)

Andrews, J.R. The function of the suppressor of stoned locus in Drosophila melanogaster (PhD)

Baker, L. Fluctuating asymmetry in Drosophila melanogaster (BSc Hons)

Beiharz, E. Cloning and characterization of the Drosophila phenylalanine hydroxylase gene (BSc Hons)

Bull, A. The molecular genetics of calmodulin binding proteins from Drosophila melanogaster (PhD)

Constable, S. Role of micro-organisms in the etiology of myiasis in Lucilia cuprina (PhD)

Currie, P. Phenogenetic analysis of the lozenge gene complex in Drosophila melanogaster (BSc Hons)

Fabb, S. Storage proteins in Chironomus (PhD)

Hannan, F. Cloning neurological genes from the base of the Drosophila X-chromosome (PhD)

Hardy, S.M. Expression of the lozenge gene complex in Drosophila melanogaster (PhD)

Lentzios, G. Cytogenetic studies of some chironomid species (MSc)

Morgan, M. The molecular genetics of the shibire locus in Drosophila melanogaster (PhD)

Nasioulas, S. Sex determination of Chironomus and related genera (BSc Hons)

O'Donnell, S. Frequency-dependent selection in Lucilia cuprina (BSc Hons)

Parker, A. The genetic basis of insecticide resistance (BSc Hons)

Pasquini, G.M.F. Molecular analysis of the lozenge locus in Drosophila melanogaster (MSc)

Petrovich, T. Molecular and genetic studies of the suppressor of stoned locus in Drosophila melanogaster (PhD)

Pettigrove, V. Taxonomy and ecology of several Chironomidae species (MSc)

Skinner, S. Retrotransposons in insect genomes (BSc Hons)

Tangney, S. Molecular characterization of neurological mutants of Drosophila (MSc)

Department of Zoology

Kavanagh, M. Acoustic behaviour of the mole cricket, Gryllotalpa australis (PhD)

Nikolakopoulus, N. Speciation and the evolution of reproductive isolation in field crickets (Gryllidae) (PhD)

Russell, C. Learning in locusts (MSc)

Thomas, C. Sound reception in mole crickets (MSc)

LA TROBE UNIVERSITY (Dr T. New)

Department of Zoology

Ashley, S. Biology and systematics of some species of Cricetopus (Chironomidae) in Victoria.

Buchanan, G.A. The biology, quarantine and control of grape phylloxera, Daktulosphaira vitifolli (Fitch), in Victoria (PhD)

Ewart, D. An ecological study of termites in Victorian mountain ash forests (PhD)

Fell, J. An ecological study of three species of scorpions in Victoria (MSc)

Hewa-Kapuge, S. Ecological studies of the cabbage white butterfly, Pieris rapae L., (PhD)

McLaren, D. The diversity, succession and effects of grazing insects on plantation grown eucalyptus (PhD)

Ridland, P. The role of cereal aphids in the transmission of Barley Dwarf Yellow virus near Werribee and complementary laboratory studies (PhD)

Satasook, C. The effect of different varieties of grain on the biology of some stored-product pests (PhD)

Schmidt, E. The systematics and biogeography of the Psocoptera of Tasmania (MSc)

Smith, I.R. Evaluation of insecticidal application techniques on pome fruit pests and their natural enemies (PhD)

Sutton, N. A population model for the light brown apple moth (PhD)

Department of Genetics and Human Variation

Davidson, J. Ecological studies on natural populations of Drosophila (PhD)

Tomasov, J. The ecological genetics of Chrysolina quadrigemina (Coleoptera) (PhD)

MONASH UNIVERSITY (Dr G. Ettershank)

Department of Zoology

Boulton, A. The ecology of the macroinvertebarte fauna of temporary streams (PhD)

Brown, C. Analysis of polytene chromosomes of Sarcophaga sp. (PhD)

Closs, G. Predator/prey relationships in a stream environment (PhD)

Collier, M.A. Analysis of reproductive hormones in Sarcophaga sp. (PhD)

Coy, R. Nematodes and arthropods in soil and litter of Eucalyptus regnans forest (PhD)

Ewers, J. Effects of physiological factors on the release of PTTH and ecdysteroids in Sarcophaga (BSc Hons)

Hichulli, D. Digestion of grasses in the Australian plague locust C. terminifera (BSc Hons)

Lawrence, A. Heat shock proteins in Sarcophaga (BSc Hons)

O'Connor, N. Ecology of lowland streams in northern Victoria (PhD)

Roberts, B. Age pigment accumulation in sarcophagid flies (MSc)

Schreiber, S. Seasonality of stream drift (MSc)

Schwarz, M.P. Comparative social organisation and caste determination in allodapine bees (PhD)

St Clair, R. Taxonomy and ecology of larvae of family Leptoceridae (Trichoptera) (PhD)

Wallace, D. Mites in foliar domatia of Australian plants: an assessment of plant-mite mutualism (PhD)

Young, C. Neuropeptide hormones in higher Diptera (PhD)

Genetics Department

Agrostis, A. DNA restriction map variation, using four base-cutter endonucleases, at an enzyme locus in natural populations of Drosophila melanogaster (PhD)

Matthew, P. Molecular and population genetics of a naturally occurring 37-base-insert variant of the alcohol dehydrogenase gene of Drosophila melanogaster (PhD)

Ross, J. Gene expression and DNA haplotype variation in the glycerol-3-phosphate oxidase locus of Drosophila melanogaster (PhD)

Urban, A. The use of intraspecific length variation in the AT-rich region of mitochondrial DNA to evaluate population differentiation in Drosophila melanogaster (BSc Hons)

TASMANIA

UNIVERSITY OF TASMANIA (Dr J.L. Madden)

Department of Agricultural Science

Candy, S. Life table analysis of the developmental biology of Platypus subgranosus and an investigation of the pattern of attack on the host tree Nothofagus cunninghamii (M Agr Sc)

Cao Yong. Biological control of two-spotted mite infesting hops (M Agr Sc)

Alishah, A. The ecology and control of cabbage pests with particular reference to crop phenology and biological control (PhD)

Ireson, J. Studies on lucerne flea and other Collembolla in the Tasmanian cultural steppe (PhD)

McQuillan, P. The taxonomy, ecology and host plant relationships of some Tasmanian root-feeding cockchafers (PhD)

Mensah, R.K. Biology and integrated control of the psyllid, Ctenaryataina thysanura infesting boronia (PhD)

Miller, L. Theoretical and practical aspects of the formulation and application of entomopathogenic nematodes (PhD)

Wanphen Srithongchai. Dynamics of aphid-borne plant virus diseases (PhD)

Sutohn Suwanbutr. Biology, ecology and control of lucerne aphids (PhD)

Department of Zoology

Jackson, J. Taxonomy and functional morphology of three families of Trichoptera (PhD)

Williams, H. Studies on the geographical and seasonal distribution of Tasmanian calliphorid flies (PhD)

WESTERN AUSTRALIA

MURDOCH UNIVERSITY (Dr J.A. Davis)

School of Environmental and Life Sciences

Angel, G. Population studies in Acrida conica (BSc Hons)

McFadden, P. Environmental parameters affecting sheep blowfly behaviour (MSc)

Cassoti, J. Transmission rates of cucumber mosaic virus into lupin plants by four species of aphid (BSc Hons)

CURTIN UNIVERSITY OF TECHNOLOGY (Dr J. Majer)

School of Biology

Berlandier, F. Phenology of Pilbara mosquitoes (Grad Dip)

Van Heurk, P.F. The role of parasites and pathogens in controlling Jarrah defoliation by the gum-leaf skeletonizer (Uraba lugens) (Grad Dip)

Van Schagen, J. The biology and ecological impact of bag shelter moths in the Western Australian wheatbelt (M App Sci)

UNIVERSITY OF WESTERN AUSTRALIA (Dr W.J. Bailey)

Department of Botany

Postle, A.C. The influence of differing soil and vegetation types on Jarrah forest soil and litter invertebrates (PhD)

Peakall, R. Pollination biology of orchids by insects (PhD)

Department of Zoology

Cook, D. The reproductive behaviour of dung beetles in Western Australia (PhD)

Dolsopon, S. Reproductive strategies in two hymenopterous parasites of red scale (PhD)

Dolva, G. The biology of forest nemobiine crickets (PhD)

Heap, M. Studies of the stem borer, Zygrita diva, in legume pastures in NW Australia (MSc)

Mazanec, Z. The biology of the Jarrah leaf miner (PhD)

Poonsavasde, P. The behaviour of the scelionid egg parasite, Telenomus remus on Spodoptera litura (MSc)

Woods, W. Biological control of Parkinsonia aculeata (MSc Agr)

Yeoh, P. Reproductive strategies of Med-flies (PhD)

NOTICE TO WORKERS ON HYDRADEPHAGA

To assist communication between workers on the Hydradephaga we are planning an annual compilation of all papers dealing with any aspect of these groups. To do this we ask for the collaboration of all our colleagues who are active in this field. Do not hesitate to send information concerning publications in local journals or from other sources that we may not know about. This includes papers where the Hydradephaga are briefly mentioned. Of particular interest would be information on unpublished investigations (Theses, etc.)

We hope that such a compilation will be of wide practical use and we intend to distribute copies to all contributors.

Michel Brancucci
Entomology Department
Natural History Museum
Augustinergasse 2
CH-4001 Basel/Switzerland

THE ENTOMOLOGICAL SOCIETY OF CHINA A BRIEF INTRODUCTION

According to the literature, the earliest entomological association in China was formed in Nanjing in 1924, entitled "Six-foot Society". The society was small, consisting of some twenty members from two universities in Nanjing and the Entomological Bureau of Jiangsu Province. At that time, there were very few people studying and working with insects in China, and there were probably more entomologists in Jiangsu than in any of the other provinces. The society carried out varous scientific activities, such as organizing seminars, giving advice on insect pest control to the community, collecting money to send young people overseas to learn entomology, etc. The establishment of this society promoted the development of entomology in China. In the next twenty years, four similar societies emerged. These are the Entomological Society of Zhongshan University, the Entomological and Phytopathological Society of Hangzhou, the Entomological Society of Nantong and the Entomological Society of Qinghua. The last three societies each published a Journal, entitled, respectively, "Entomology and Phytopathology", "The Joy of Insects" and "The Bulletin of the Entomological Society of Qinghua".

Despite the efforts made by entomologists from various parts of the country during those early years, most of the above-mentioned societies did not survive long, mainly because of the then backward and unrestive state of the country and the war against the Japanese invasion. Nevertheless, all these pioneer societies made significant contributions to the development of entomology in China and formed the basis for the establishment of a national society.

During the thirties, more and more universities in China started to offer courses and degrees in biology and entomology. Meanwhile, more and more university graduates came back from overseas. As a result, the entomological community expanded steadily. More and more people suggested that a national society was needed to foster communication and exchange of information between entomologists over the country and organize activities conducive to the advancement and dissemination of entomological knowledge. In 1944, more than 30 entomologists from various parts of the country jointly wrote an application to the then government, asking for permission to establish a national entomological society. Luckily, the application was promptly granted. On 12 October 1944, after a long period of struggle and preparation, a national society of entomology, the Entomological Society of the Republic of China, was finally born! Some 50 entomologists came to the ceremony held in Chongquing, many others who wanted to come could not do so because of financial and transport difficulties. There were seminars and discussion sessions after the ceremony.

In the next five years, the ,country continued its hard and difficult life because of the war against the Japanese invasion and later the civil war before the founding of the People's Republic of China. Despite all the difficulties one could imagine during those times, the society published a quarterly journal entitled "Bulletin of the Entomological Society of the Republic of China" and organized the second conference in Nanjing in 1947. More than 50 people came to that conference and 17 papers were presented. Meanwhile, the society's membership increased rapidly, and 1948, at the time when the society had to cease its activities because of the development of the civil war, there were 408 members organized in five branches over the country.

Two months after the founding of the People's Republic of China in October 1949, the Ministry of Agriculture held a national congress of agriculture in Beijing. Some of the members of the Entomological Society were invited to the congress. They were happy to see each other and immediately initiated the reorganization of the Society. Under the favourable auspices of the Association of Sciences from the central government, an organizing committee was quickly set up. Several months later, a council was elected by postal ballot. Various activities were then resumed or started. After about a year, membership increased to 605 and a journal entitled "Acta Entomologica Sinica" began publication in 1951. With the support from the government, a national congress was held in Beijing in September 1951. More than 100 people came, and apart from the seminars and other academic activities organized, the congress worked out the constitution of the society. The present name, the Entomological Society of China, was then adopted. The council was formally elected by secret ballot of the representatives in the congress. The council consisted of 15 members, and Dr Liu Chong-le, an insect taxonomist and the then chief of the Bejing Zoological Institute, Academia Sinica, was elected as the president. By that time, the membership had increased to 671. In order for the society to function effectively, 15 regional, affiliated societies were established.

Under the constitution, the council should be re-elected every four years at the four-yearly national congress. However, the second council, which was elected in 1954, held office until 1982, a period of 28 years! During this period, although several national congresses were held, a re-election was not possible because of interference from various political campaigns. The third council was elected at the national congress held in 1982, and by then the society's membership had increased to more than 4000. The council then consisted of 73 members, and the number of regional, affiliated societies increased to 22. In 1984, a national congress was held in Beijing to celebrate the 40th anniversary of the establishment of the society. The society's membership had been increasing steadily in recent years, and by the end of 1986 had exceeded 6000. At the same time, nine working committees were set up, i.e. fauna and taxonomy, physiology and biochemistry, biological control, toxicology, agricultural entomology, forestry entomology, medical entomology, ecology, and acarology.

The Society's constitution states that the objects of the society should be to unite entomologists, foster entomological research and disseminate entomological knowledge for the benefit of the country and Man. To achieve its objects, the society has organized, or carried out many activites, which can be summarized as follows:

1. Organize entomological conferences. In all, 35 conferences, of which some were national and diverse, and others were regional and more specialized, were organized during the years 1949-1985.

2. Publish entomological journals. Three regular journals are published:

   Acta Entomologica Sinica
   The society's top journal, began publication in 1951, published quarterly, in Chinese with English summary, containing scientific papers of original research in all aspects of entomology.

   Insect Knowledge
   One of the most popular scientific journals in China (more than 30,000 copies are now printed), published every other month, containing scientific papers on original research, review articles, articles on experimental techniques as well as sections on basic knowledge and problem discussion.

   Acta Zootaxonomica Sinica
   A quarterly taxonomic journal published jointly with the Society of Animal Sciences of China.

3. Popularization of entomological knowledge.
   (a) Make films and slides about insects for the public. Nearly 20 films have been made and shown to the public. Most of the films, such as the series entitled "The World of Insects", are interesting, informative and welcomed by the public.
   (b) Publish simply-written books;
   (c) Hold exhibitions. For example, an exhibition of butterflies held by the Beijing Zoological Institute in 1980 (over 1000 species were shown) attracted more than 80,000 people in a month;
   (d) Organize special summer camps for young people to learn about the collection and identification of insect specimens;
   (e) Offer special courses (usually about one month) to members of the society. In the last few years, about 600 people received training.

4. Encourage and help scientific exchanges and co-operation between entomologists in China and other countries.

Reference

Wu Fu-zhen and Yue Zong, 1986. History of the Entomological Society of China (1944-1984). 42 pp. (in Chinese). Published by the Entomological Society of China.

Liu Shu-sheng
Dept. of Plant Protection
Zhejiang Agricultural University
Hangzhou
People's Republic of China.

(The writer recently returned to China after a period with CSIRO Entomology in Canberra)

SYMPOSIUM REPORT

5TH INTERNATIONAL SYMPOSIUM ON EPHEMEROPTERA AND 9TH INTERNATIONAL SYMPOSIUM ON PLECOPTERA, MARYSVILLE, VICTORIA, FEBRUARY, 18-24 1987

The 9th International Symposium on Plecoptera was conducted jointly with the 5th International Symposium on Ephemeroptera which provided valuable opportunities for interchange of ideas between the two groups. Sixty-eight registrants from 22 countries (and every continent) attended.

A joint symposium on "Life-histories of Mayflies and Stoneflies" was held on Sunday 22 February with a keynote address by Dr John Brittain "Life history strategies in Ephemeroptera and Plecoptera" and presentation of 11 papers. The opening remarks of the Plecoptera meeting were delivered by Prof H.B. Noel Hynes and the Keynote Address by Dr Habil Peter Zwick on "Transantarctic Relationships in the Plecoptera". Thirteen papers were presented in five Plecoptera sessions and 25 Ephemeroptera papers in 9 sessions. A volume to incorporate all presentations will be published.

On the evening of Wednesday 18 February, participants collected at a light trap on the Taggerty River, on Thursday 19 February at the Keppel Falls and on Monday 23 February, participants and accompanying persons visited Lake Mountain.

On the lighter side, overseas visitors were introduced to the Aussie BBQ complete with Pavlova, a bush dance with the band "Paradiddle" and the Yarra Burn winery.

The Australian contingent was disappointingly small and future efforts need be directed towards encouraging young students into aquatic entomology.

(Francis B. Michaelis)

ASSOCIATION OF PACIFIC SYSTEMATISTS

The latest Newsletter of this recently-formed organisation has just appeared. It contains a wealth of information on research activities, collection resources and personalities connected with systematics of plants and animals in the Pacific Region (including Australia). A new Interim President, Dr Donald Duckworth, Director of the Bishop Museum, has been appointed and will serve until the Association's first organizational meeting takes place at the Pacific Science Congress in Seoul in August this year. Membership is recommended to Australian systematists and can be gained by sending US$5.00 to:

The Secretary
Association of Pacific Systematists
Bishop Museum
PO Box 19000-A
HONOLULU HAWAII 96817-0916

CUT ALONG THIS LINE

AUSTRALIAN ENTOMOLOGICAL SOCIETY INCORPORATED

APPOINTMENT OF PROXIES

(This completed form should reach the Secretary prior to the meeting(s) concerned).

I, ... of ....

being a member of the above-named Society, hereby appoint ....

.... of ....

as my proxy to vote for me on my behalf at the Council Meeting, Annual or Special General Meeting, as the case may be, of the Society, to be held on the 15th to 20th days of August, 1987 and at any adjournment thereof.

Signed this ....day of .... 19 ....

(Signature) ....

(A photocopy of this form may be used)

AUSTRALIAN ENTOMOLOGICAL SOCIETY INCORPORATED

NOMINATION OF OFFICE BEARER

(This completed form should reach the Secretary by 7 July, 1987.)

I nominate ....

for election to the office of ....

Name of nominator ....

Signature ....

Date ....

I second this nomination

Name of seconder ....

Signature ....

Date ....

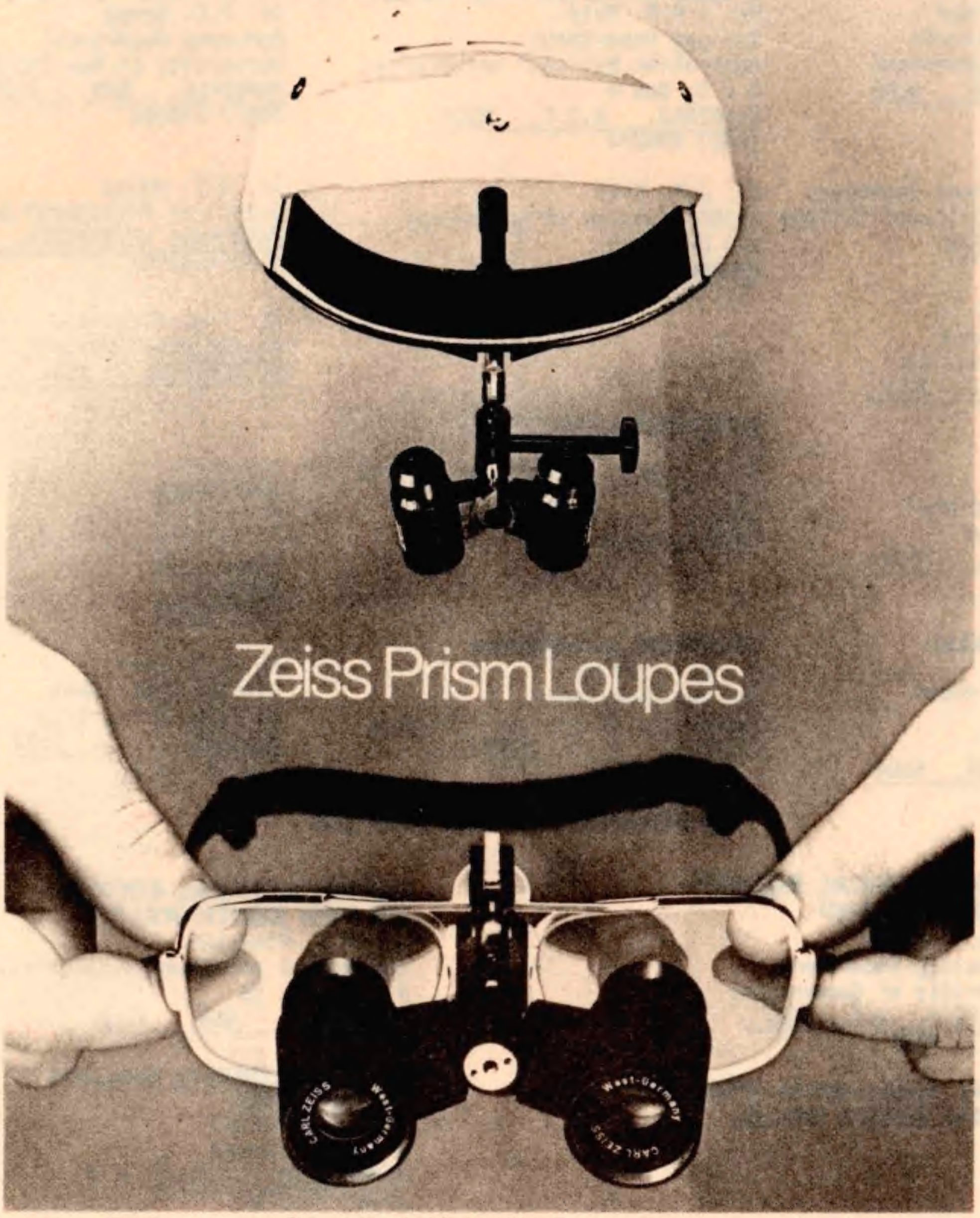
I accept this nomination*

Signature ....

Date ....

* The nominee is requested to attach a typed statement, no exceeding 300 words, which includes the following: his/her professional qualifications, address, institution, position held, fields of entomological interest, previous offices or appointments held in the Society; and other information which may be of Assistance to members should a postal ballot be required.

(a photocopy of this form may be used)



Brightest image. Flat, expanded field. With Zeiss craftsmanship and design.
Now with longer working distances available.

Magnification	Working Distance	Field of View
4.5x	350mm	50mm
3.3x	450mm	88mm
4.0x	450mm	71mm

Image brightness: 85% of objective surface.

Send for our colour brochure today

Carl Zeiss Pty. Ltd. 114 Pyrmont Bridge Road,
Camperdown 2050.

Name ....

Address ....

....

ZEISS

West Germany

REGIONAL COUNCILLORS

QUEENSLAND

Miss M.A. Schneider
Entomology Department
University of Queensland
ST. LUCIA. QLD. 4067.
(07) 3773656

Dr. E. Hassan
Department of Plant Pathology
Queensland Agricultural College
LAWES. QLD. 4345.
(075) 620285

Mr. M.F. Downes
Zoology Department
James Cook University
TOWNSVILLE. QLD. 4811.
(077) 814111

TASMANIA

Mr. A.C. Rath
Agriculture Department
St. John's Avenue
NEW TOWN. TAS. 7008.
(002) 284851

SOUTH AUSTRALIA

Dr. D.J. Cooper
Entomology Department
Waite Institute
PMB No 1
GLEN OSMOND. SA. 5064.
(08) 797901

AUSTRALIAN CAPITAL TERRITORY

Mr. C.A.M. Reid
Zoology Department
Australian National University
G.P.O. Box 4
CANBERRA. A.C.T. 2601.
(062) 494074

Dr. J.C. Daly
CSIRO Division of Entomology
GPO Box 1700
CANBERRA. ACT. 2601.

NORTHERN TERRITORY

Mr. T.L. Fenner
D.P.P. Agric. Quarantine Service
Box 2268
DARWIN. N.T. 5794.
(089) 818733

WESTERN AUSTRALIA

Dr. W.J. Bailey
Zoology Department
University of Western Australia
NEDLANDS. W.A. 6009.

NEW SOUTH WALES

Dr. P.C. Gregg
Agronomy Department
University of New England
ARMIDALE. NSW. 2351.
(067) 732655

Dr. D.F. Hales
School of Biological Sciences
MACQUARIE UNIVERSITY. NSW. 2109.
(02) 8058181

Mr. J.A. Macdonald
25 Kooloona Crescent
WEST PYMBLE. NSW. 2073.

VICTORIA

Dr. P.P. Stahle
Plant Research Institute
Swan Street
BURNLEY. VIC. 3121.
(03) 8101511

Mr. D.M. Ewart
Zoology Department
La Trobe University
BUNDOORA. VIC. 3083.
(03) 4783122

REPRESENTATIVE COUNCILLORS

ENTOMOLOGICAL SOCIETY OF QUEENSLAND

Mr. G. Daniels
Entomology Department
University of Queensland
ST. LUCIA. QLD. 4067.
(07) 3773656

ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES

Dr. M.J. Fletcher
Biological and Chemical Research Inst.
P.M.B. No. 10
RYDALMERE. NSW. 2116

ENTOMOLOGICAL SOCIETY OF VICTORIA

Mrs. Joy Burns
3 Inglis Street
MORNINGTON. VIC. 3931.
(059) 753730

OVERSEAS CORRESPONDENTS

PAPUA NEW GUINEA

Mr. M. Arura
Bubia Agricultural Research Centre
P.O. Box 73
Lae
PAPUA NEW GUINEA

NEW ZEALAND

Mr. J. Tenquist
Wallaceville Animal Res. Centre
Private Bag
UPPER HUTT. N.Z.

HONORARY MEMBERS

Dr. J.W. Evans
Dr. E.N. Marks
Dr. K.R. Norris
Dr. C.N. Smithers

MACKERRAS MEDALLISTS

1984 Dr. J.A.L. Watson
1986 Dr. R.W. Sutherst

SUSTAINING ASSOCIATES

AUSTRALIAN ENTOMOLOGICAL SUPPLIES
BAYER AUSTRALIA LTD
CIBA-GEIGY LTD
CYANAMID AUSTRALIA PTY LTD
DOW CHEMICAL (AUST.) LTD
F. & B. CHEMICALS PTY LTD
I.C.I. AUSTRALIA LTD
SHELL CHEMICAL (AUST.) PTY LTD